



# MARKET COMMERCIAL CODE (MARCH 2021)

## SUSTAINABLE ENERGY FOR PAKISTAN (SEP) PROJECT

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## ACRONYMS

AASS	Ancillary Services
AEDB	Alternate Energy Development Board
BMC	Balancing mechanism for Capacity
BME	Balancing mechanism for Energy
BPC	Bulk Power Consumer
CCOP	Commercial Code Operating Procedure
CMOD	Competitive Market Operation Date
COD	Commercial operation date
CPPA-G	Central Power Purchasing Agency (Guarantee) Limited
CTBCM	Competitive Trading Bilateral Contract Market (competitive wholesale electricity market for Pakistan)
DC	Distribution Code
DISCOs	Distribution Companies; successors of WAPDA restructuring
DM	Distribution Margin
EPA	Energy Purchase Agreement
GENCOs	Government owned thermal Generation companies, successors of WAPDA restructuring
IAA	Independent Auction Administrator
IEMSM	Integrated Electricity Market Simulation Model
IGCEP	Indicative Generation Expansion Capacity Plan
KE	K-Electric, formally known as KESC.
MCCRP	Market Commercial Code Review Panel
MCCRP	Market Commercial Code Review Panel
MCCWG	Market Commercial Code Working Group
MO	Market Operator
MoF	Market Operator Fee
NEPRA	National Electric Power Regulatory Authority
NPCC	National Power Control Centre
NTDC	National Transmission and Dispatch Company
PPA	Power Purchase Agreement
PPIB	Private Power Infrastructure Board
SCADA	Supervisory Control and Data Acquisition
SCED	Security Constrained Economic Dispatch
SDC	Scheduling and Dispatch Code
Small DISCOs	Housing Societies which are granted distribution License by NEPRA
SPPs	Small Power Producers

SPT	Special Purpose Trader
TNO	Transmission Network Owner
TSP	Transmission Service Provider
UoSC	Use of System Charge
VIU	Vertical Integrated Utility
WAPDA	Water and Power Development Authority

# I. GENERAL CONDITIONS

## I.1 OBJECTIVES AND SCOPE

### I.1.1 TITLE

I.1.1.1 This code shall be called the Market Commercial Code of Pakistan (the “Code” or the “Market Commercial Code”)

### I.1.2 OBJECTIVES

I.1.2.1 The general objectives of the Market Commercial Code are:

- To establish, govern and promote efficient and transparent settlement and payment arrangements and procedures, centrally administered by the Market Operator, specifically of the commercial and financial transactions relating to Imbalances of the sale and purchase of Energy and Capacity in the Contracts signed by Market Participants, in the manner prescribed under and pursuant to the provisions of the Act and rules and regulatory framework;
- To establish the allowed transactions among Market Participants since the CMOD;
- To set out the rights and responsibilities of Market Participants in relation to buying and selling of electric power, settlement and payments of Imbalances and other service charges;
- To set out the rights and responsibilities of the Service Providers, and the Market Operator in relation to provision of metering functions and other allied functions;
- Ensure adequate information dissemination to protect the transparency in the Market; and
- To promote and enable the development of competitive power markets in accordance with the Act, the approved market design and the rules and regulation framed thereunder.

### I.1.3 APPLICABILITY

I.1.3.1 This Market Commercial Code shall be applicable since its approval by the Authority and will remain in force until the Authority prescribes something different.



## 1.2 INTERPRETATION

### 1.2.1 DEFINITIONS

1.2.1.1 Capitalised words and expressions used in this Code, unless the context otherwise requires, shall have the following meaning.

- **"Act"** means the Regulation of Generation, Transmission and Distribution of Electric Power Act, 1997, including the "Regulation of Generation, Transmission and Distribution of Electric Power (amendment) Act 2018 modifications;
- **"Admission Application"** means the document which an Applicant Participant, must submit when applying for registration with Market Operator, in the form set out in the applicable Commercial Code Operational Procedure or such other form as the Market Operator may from time to time publish.
- **"Allocation Factor"** means a value, expressed in percent, which is used to commercially allocate all Legacy Contracts to each DISCO and eventually KESC individually.
- **"Amendment Submission"** means the requests for review or amendment of this Code or, if applicable, the Grid Code, in accordance with this Code.
- **"Amounts Payable"** means the amount of money, expressed in PKR, that a Market Participant is obliged to pay, to discharge its obligations as per the Settlement Statements issued by the Market Operator.
- **"Amounts Receivable"** means the amount of money, expressed in PKR, that a Market Participant is entitled to receive, as per the Settlement Statements issued by the Market Operator.
- **"Ancillary Services"** has the meaning assigned to the term in the Grid Code.
- **"Applicable Law"** means the law of Pakistan.
- **"Applicable Documents"** means the rules and regulation issued in pursuance of the Act by the Federal Government or the Authority, from time to time, the Licences, the Grid and Distribution Codes and any documents, instruments, approvals, directions or authorizations issued or granted by the Authority in exercise of its powers under the Act and any document in each case of a binding nature.
- **"Applicant for Dispute Resolution" or "Applicant for DR"** means the party to a Dispute that issues a Notice of Dispute and, where the context so requires, includes a Respondent who files a crossclaim or a counterclaim.
- **"Applicant Participant" or "Applicant"** means any person who has initiated the application process with the Market Operator to become a Market Participant in accordance with 3 of this Code.
- **"Arbitration Tribunal"** has the meaning assigned to the term in Section 15.3 of this Code.
- **"Arbitrator"** means a member of the Dispute Resolution Panel appointed to the Arbitration Tribunal to arbitrate a Dispute.
- **"Audit Report"** means the report that presents the results of an audit and issues recommendations to the Market Operator.
- **"Authority"** means the National Electric Power Regulatory Authority established under the Act.

- **“Available Capacity”** means the share of the Installed Net Capacity which is available for being dispatched by the System Operator at any particular moment.
- **“Back-feed Energy”** means the Energy which is supplied from the Transmission or Distribution Network to a Generation Plant or Generation Unit, while this plant or unit is not available or not dispatched.
- **“Back-up Meter ”** means any meter and metering devices installed at the Metering Point for checking or backup purposes, as prescribed in the Grid Code.
- **“Balancing Mechanism for Energy”** means the mechanism, centrally administered by the Market Operator, to settle the Imbalances between the metered quantities that measure the real time Energy injected or extracted to/from the Transmission or Distribution Network for each Market Participant, and the Energy commitments (contracted quantities) of that Market Participant, registered with the Market Operator.
- **“Balancing Mechanism for Capacity”** means the mechanism, centrally administered by the Market Operator, to settle Imbalances associated with compliance with the Capacity Obligations as established in this Code.
- **“Base Supplier”** means a DISCO which has received a Supply License from the Authority, allowing it to supply electricity to the consumers located in the area assigned to the DISCO at the rates established by the Authority.
- **“Bilateral Contract”** means an agreement between two parties for the sale and purchase of a defined amount or Energy and/or Capacity at each Energy or Capacity Settlement Period, as the case may be, and that complies with conditions established in this Code.
- **“BPCs which has the intention to contract its supply with a Competitive Supplier”** means a BPC which has formally informed the Distribution Licensee or its associated Base Supplier, as the case may be, its irrevocable intention to cease to be supplied by the Base Supplier and to establish a contract for receiving such supply from a Competitive Supplier at a certain date.
- **“Bulk-Power Consumer (BPC)”** means a consumer who purchases or receives electric power, at one premises, in an amount of one megawatt or more or in such other amount and voltage level and with such other characteristics as the Authority may specify, as defined in the Act.
- **“Business Day”** has the meaning assigned to the term in Clause 1.2.4.1.
- **“Captive Generation”** shall have the meaning defined in the Act.
- **“Capacity” or “Electric Capacity”** means the maximum potential amount of electric power that a Generator can produce, measured in kilowatts (kW) or multiples of kW.
- **“Capacity Obligations”** has the meaning ascribed to the term in 11 of this Code.
- **“Capacity and Associated Energy Supply Contract”** has the meaning ascribed to the term in Section 4.3.2 of this Code.
- **“Captive Generation”** has the meaning to this term established in the Act.
- **“Category (in relation with a Market Participant)”** has the meaning as ascribed to in Clause 2.2.1.2.
- **“Centralized Dispatch”** means the set of actions, taken by the System Operator, through which it decides the amount of electric power that each Generation Unit shall produce.
- **“Clause”** means a clause of this Code.

- **“Close of Banking Business”** means [5] p.m., Pakistan time or any other official time specified by the Federal Government.
- **“Commercial Code Operational Procedure”** means a procedure, developed by the Market Operator or the System Operator or a Service Provider, as the case may be, which provide details regarding the procedures or processes that are necessary for the proper implementation of this Code.
- **“Commercial Metering System”** means the system to measure the Energy injected or withdrawn from the grid by a Market Participant. This metering will be used for the settlement process of the Market Operator. The Commercial Metering System shall have the characteristics and comply with the requirements as established in the Grid Code.
- **“Company”** means a company incorporated under the Laws of Pakistan.
- **“Competent Authority”** means any local or national agency, authority, department, minister, official, court, tribunal or public or statutory person (whether autonomous or not) of the Government of Pakistan or under the control of the Government of Pakistan, which has jurisdiction over a Market Participant or the subject matter of the Market Commercial Code or the Grid Code.
- **“Competitive Market Operation Date (CMOD)”** means the date at which the CTBCM starts its commercial operations, as specified by the Authority.
- **“Competitive Supplier”** means a person which has received a Supply License from the Authority, allowing it to supply electricity to BPCs, at bilaterally negotiated rates, in the area established by the Authority in the corresponding Supply License.
- **“Compliance with Capacity Obligations Report”** has the meaning ascribed to the term in sub-Section 11.5.1 of this Code.
- **“Condition”** means condition of the Market Commercial Code.
- **“Confidential Information”** means:
  - a. Information which is proprietary to or has been specified by disclosing person in confidence implicitly or explicitly, where disclosure can reasonably be expected to:
    - i. prejudice significantly the competitive position of the disclosing person;
    - ii. result in material loss or gain to the disclosing person or another person;
    - iii. compromise the efficiency of this Code or the Grid Code; or
    - iv. result in the disclosing person being in breach of a bona fide arms-length confidentiality agreement to which the information is subject; and
  - b. information required by this Code, the Grid Code or Applicable Law to be kept confidential, provided that information furnished by a Market Participant as a requirement of being a Market Participant and information identified in this Code as information to be published shall be deemed not to be Confidential Information.
- **“Congested Area”** has the meaning as ascribed to the term in Sub-section 7.1.1 of this Market Commercial Code
- **“Congestion”** means a situation in the Transmission or Distribution Network in which the materialization of the least cost Generation dispatch would result in

overloads in one or more Equipment and/or non-assumable voltage levels and/or violation of the reliability or security criteria established in the Grid Code.

- **“Connect”** means a form of physical link to the Transmission or Distribution Network, and like terms shall be construed accordingly.
- **“Connection Agreement”** means the agreement between the Transmission Service Provider or a Distribution Network Service Provider, as it corresponds, and a Market Participant or a BPC, between two network Service Providers, for the provision of network services.
- **“Connection Point”** means a point of connection between:
  - A Transmission Licensee or a Distribution Licensee and a Generation Plant or Generation Unit;
  - A Transmission Licensee or a Distribution Licensee and a BPC; or
  - A Transmission Licensee and a Distribution Licensee; or
  - Two different Transmission Licensees or Distribution Licensees; or
  - A Transmission Licensee or Distribution Licensee and foreign countries or territories where the applicability of the Act is not extended; or
  - Two different Market Participants; or
  - Any other point within the Transmission or Distribution Networks which the Market or System Operator considers necessary to be metered for the proper implementation of this Code.
- **“Contract Market”** means the market of bilateral contracts between Market Participants.
- **“Contract Register”** means the record organized and maintained by the Market Operator on the quantity of Energy and/or Capacity bought and sold among Market Participants through contracts.
- **Contract Termination Date** means the termination date of a bilateral contract, as established in the Request for Contract Registration submitted by the parties to the Market Operator, or any other date for contract termination which has been duly notified by both parties to the Market Operator.
- **“Counsellor”** means the Dispute Resolution Counsellor;
- **“CTBCM”** means Competitive Trading Bilateral Contract Market for the competitive wholesale electricity market as approved by the Authority;
- **“Credit Notification”** means a notification, issued by the Market Operator to a Market Participant immediately after issuing a Final Settlement Statement, informing such Market Participant, the amount it is entitled to receive from the Market Operator pursuant the results of the Final Settlement Statement, and that will be transferred to such Market Participant provided that enough funds exist in the Market Operator Clearing Account.
- **“Critical Hours”** has the meaning ascribed to the term in sub-Section 10.2.2 of this Code
- **“Customized Contracts”** has the meaning ascribed to in Clause 4.2.2.4 of this Code.
- **“Default Amount”** means any amount a Market Participant has failed to pay on a Payment Date.
- **“Default Interest”** means the interest rate which is payable by a Market Participant if it fails to fulfil its payment obligations pursuant this Code.

- **“Demand”** means either the Energy supplied to consumers over a period of time (Energy Demand) or the electric power supplied to consumers at a particular instant (Capacity Demand).
- **“Demand Forecast”** means an estimate of future Demand typically worked out by using mathematical forecasting techniques and historical Demand data or any other pertinent information.
- **“Dispatch”** has the meaning assigned to the term in the Grid Code.
- **“Dispatch Day”** means a period in the Dispatch process from 00.00 hours to 24.00 hours in the same calendar day.
- **“Dispatch Instruction”** means the operating instruction issued by the System Operator to a Generation Unit for its Dispatch in accordance with the prescriptions of the Grid Code.
- **“Dispatch Period”** means every sixty-minute interval, or such other shorter interval the System Operator may consider appropriate, during a Dispatch Day, commencing at 00:00 hours of a Dispatch Day and ending at 24:00 hours of that Dispatch Day.
- **“Dispatch Schedule”** means the schedule developed by the System Operator in accordance with the Grid Code for a Dispatch Period, which has to be completed and communicated to the Generator not later than two hours prior to the commencement of the relevant Dispatch Period.
- **“Dispatchable Generation Unit”** means a Generation Unit which is able to be controlled, increasing or decreasing its production following manual or automatic instructions issued by its operator.
- **“Dispute”** means any dispute or disagreement or difference arising under this Code or any provision hereof, or the obligations or performance of a Market Participant under any provision hereof.
- **“Disputed Amount”** means the amount calculated pursuant or in relation to Dispute process.
- **“Dispute Resolution Counsellor” or “Counsellor”** means the individual appointed by the Authority pursuant Section 15.1.1 of this Code.
- **“Dispute Resolution Panel”** means the panel of the same name established by the Commission pursuant to Section 15.1.2 of this Code.
- **“Distribution Company (DISCO)”** means the distribution companies Licensed by Authority to engage in the distribution of electric power which are also holders of a Supply License either granted by the Authority or as per provisions of the Act.
- **“Distribution Network”** means the system composed by lines, cables, transformers and associated equipment with operating voltages of 132 KV and below.
- **“Distribution Network Restriction”** means restriction imposed by the System Operator to the least cost dispatch of Generation Units in order to avoid one or more Congestions in the Distribution Network.
- **“Distribution Network Service Provider”** means a Distribution Licensee which provides Open Access.
- **“Early Contract Termination”** means the termination of a Contract, decided by the parties, on a date prior to that included in the Contract Register of the Market Operator

- **“Electronic Local Meter Reading”** means obtaining the values of half-hourly Energy stored in internal memory of the Meter by making a physical link between such Meter and a portable electronic equipment capable to download such information.
- **“Embedded Generation”** means a Generation Plant or Generation Unit directly connected to a Distribution Network.
- **“Energy”** means electrical Energy produced, flowing through or supplied by Generation Plants, Transmission Network or Distribution Network, measured in units of watt-hours or standard integers or multiples thereof.
- **“Energy Limited Generation Unit”** means a Generation Unit which capability to inject Energy into the grid is constrained by the availability of the energy stored.
- **“Equivalent Availability Factor”** means the fraction of Net Capacity that a Generation Unit can provide, after all types of outages and deratings are considered, averaged over a calendar year.
- **“Excess Losses”** means the amount of Transmission losses, expressed in kWh or multiples of kWh, which exceeds the maximum value of losses prescribed by the Authority in the latest Transmission Tariffs determination.
- **“Export”** means the selling of electric power to foreign countries or to Azad Jammu & Kashmir, Gilgit Baltistan and territories where the applicability of the Act is not extended.
- **“Extraordinary Settlement Statement”** has the meaning ascribed to the term in sub-Section 8.2.4 of this Code.
- **“Extraordinary Yearly Settlement Statement”** has the meaning ascribed to the term in sub-Section 12.3.3 of this Code.
- **“Final Settlement Statement”** has the meaning ascribed thereto in sub-Section 8.2.3 of this Code.
- **“Final Yearly Settlement Statement”** has the meaning ascribed thereto in sub-Section 12.3.2 of this Code.
- **“Firm Capacity Certificate”** means a certificate, issued by the Market Operator, which allows its owner to sell Capacity in an agreed bilateral contract, up to the amount established in the certificate.
- **“Generate and Generation”** means to produce Energy at a Power Plant and deliver it to Transmission and/or Distribution Network.
- **“Generation Company”** means a Market Participant which is Licensed or authorised by the Authority to construct, own or operate a Generation facility, as per the provisions of the Act, including Captive Generation.
- **“Generation Following Supply Contract”** has the meaning ascribed to the term in Section 4.3.1 of this Code.
- **“Generation Plant”** means a Generation Unit or group of Generation Units, connected to the Transmission or Distribution Network at a single Connection Point.
- **“Generation Unit”** means a conversion apparatus including auxiliaries and associated equipment, used to produce electric power from some other form of Energy, which is dispatched by the System Operator as an indivisible unit.
- **“Generator”** has the same meaning as Generation Company.
- **“GOP”** means the Government of the Islamic Republic of Pakistan.



- **“Grid Code”** means the document with the same name, prepared by NTDC and approved by the Authority including all the amendments or modifications produced to it and approved by the Authority, since such date.
- **“Guaranteed Capacity”** has the meaning ascribed to the term in Clause **Error! Reference source not found.** of this Code.
- **“Identification Code”** is an alphanumerical code which precisely and univocally identifies (i) a Market Participant, or (ii) a Power Plant or Generation Unit, or (iii) a Metering Point, as the case may be. Identification Codes for Market Participants will be established by the Market Operator during the registration process; Identification Codes of Power Plants or Generation Units will be established by the System Operator following the prescriptions of the Grid Code; and Identification Codes of Metering Points will be established by the Metering Service Provider.
- **“Imbalance (in relation with Capacity)”** means either the difference between the Capacity sold through a Contract, registered with the Market Operator, and the actual Available Capacity; or the difference between the Capacity purchased through a Contract, registered with the Market Operator, and the actual Maximum Demand in the relevant period taken from the grid; as the case may be.
- **“Imbalance (in relation with Energy)”** means the difference between the Energy quantities bought and sold through a Contract registered with the Market Operator and the actual quantities injected to or taken from the grid.
- **“Import”** means procurement of Energy and/or Capacity from foreign countries and from Generation Plants located in Azad Jammu & Kashmir, Gilgit Baltistan and territories where the applicability of the Act is not extended.
- **“Initial Firm Capacity Certificate”** means the Firm Capacity Certificate issued by the Market Operator to the Generators, for those Generation Units existing prior to CMOD, or at the moment of commissioning of Generation Units which are commissioned after CMOD:
- **“Installed Capacity”** means the amount of electric power that a Generation Unit or a Generation Plant is designed to run at, on a continuous basis. Installed Capacity of a Generation Unit or a Generation Plant shall be determined at the commissioning tests or at any other test, specifically designed to determine it, performed during the useful life of the involved asset.
- **“Installed Net Capacity”** means the share of the Installed Capacity that can be injected into the grid. It is calculated as the Installed Capacity minus the average capacity of the auxiliaries.
- **“K-Electric (KE)”** means K-Electric Limited, a company incorporated under the laws of Pakistan and engaged in the generation, Transmission and distribution of electricity, within its Licensed territory, under the generation, Transmission and distribution Licenses issued by the Authority, or its successors in interest.
- **“Last Resort Supplier”** means a Supplier which has the right and the obligation to sell Capacity and/or Energy, at the rates established by the Authority. to a BPC which has ceased to be supplied by a Competitive Supplier or has Terminated as Market Participant.
- **“Legacy Contract”** means a PPA or an EPA, signed or administered by the CPPA-G on behalf of the DISCOs, with a Generator or Import, at or before the CMOD.

- **“Letter of Credit”** means an unconditional and irrevocable standby letter of credit, in such form as the Market Operator may reasonably approve, issued for the account of the Market Participant in favour of the Market Operator, allowing for partial drawings and providing for payment forthwith on demand, by the Market Operator.
- **“Licence”** has the meaning ascribed to the term in the Act and the word “Licensee” will be construed accordingly.
- **“Load Facility”** means a facility that consumes Energy, which is supplied by a Market Participant.
- **“Load Following Supply Contract”** has the meaning ascribed to the term in Section 4.3.3 of this Code.
- **“Manual Local Meter Reading”** means obtaining the half-hourly, hourly, daily and/or monthly values of Energy stored in the internal memory of the Meter by visual inspection of the values shown on the Meter display.
- **“Metering Service Provider (MSP)”** means an entity responsible for the organization and administration of the Commercial Metering System and serves as the central aggregator of commercial metering data.
- **“Market”** means the Competitive Trading Bilateral Contract Market (CTBCM) of Pakistan organized for wholesale buying and selling of Energy and/or Capacity mainly through Bilateral Contracts.
- **“Market Commercial Code Working Group”** means a group organised by the Market Operator that consists of staff of the Operators and representatives of Participants and Service Providers to assess and overview interpretation and implementation of the Market Rules and its procedures.
- **“Market Operator”** means the company, Licensed by the Authority, to perform the duties of the Market Operator as per its License and this Code .
- **“Market Participant”** means any person who is party in addition to the Market Operator in a Market Participation Agreement.
- prescribed by the Federal Government as per provisions of the Act.
- **“Market Operator Clearing Account”** means the ledger trust accounts established by the Market Operator pursuant to Clause 13.1.1.3.
- **“Market Operator Surplus Account”** means the ledger trust account, established by the Market Operator, in which the Market Participant shall deposit the amounts associated with fines and/or penalties.
- **“Market Participants Register”** means the registry organised and maintained by the Market Operator with the registration information of Market Participants, as defined in Chapter 4 of this Code.
- **“Market Participation Agreement”** means the agreement signed between the Market Operator and the other party to register it as Market Participant.
- **“Market Rules”** means National Electric Power Regulatory Authority (Market Operator, Registration, Standards and Procedures) Rules 2015, or any other rules
- **“Market Surveillance Panel”** means the Panel of the same name established by the Authority pursuant to Clause 16.1.1.1 of this Code.
- **“Maximum Demand”** means maximum amount of electric power demanded by a Market Participant, averaged over a [30 minutes] period, expressed in MW.



- **“Merit Order Table”** means the table, prepared by the System Operator, containing all Generation Units and Imports ordered in ascending order of their Variable Generation Cost.
- **“Meter”** means a device that measures and registers the integral active Energy or Reactive Power over a metering interval and may include a data recorder.
- **“Metering Incident Report”** means a report prepared by the Metering Service Provider in the cases established in Clauses 5.2.2.3 and 5.3.2.2.
- **“Metering Point”** means a Connection Point which is equipped with a Commercial Metering System, it is periodically read by an authorised Metering Service Provider and it has been registered as such with the Market Operator.
- **“Metering Service Provider”** means any company or institution, authorised by the Authority and registered with the Market Operator, to perform meter reading and validation at Metering Points, and transferring these values to the Market Operator.
- **“Must Run Generation”** in a particular Dispatch Period means an Out of Merit Generation Unit which has been dispatched by the System Operator in order to alleviate Congestion.
- **“Must Stop Generation”** in a particular Dispatch Period, means a Generation Unit which Variable Generation Cost is lower than the System Marginal Cost which is not dispatched or it is dispatched at a value lower than its Available Capacity in order to alleviate Congestion.
- **“National Transmission and Despatch Company Limited (NTDC)”** means the national grid company Licensed by Authority.
- **“Non-dispatchable Generation Unit”** means a Generation Unit in which its actual production, at a given moment, is determined by the availability of primary Energy which is subject to meteorological factors which cannot be controlled.
- **“Notice of Dispute”** has the meaning ascribed thereto in Clause 15.5.2.1 of this Code.
- **“Open Access”** means the use of the Transmission Network or Distribution Network of the Transmission Service Provider or Distribution Network Service Provider by Market Participants or BPCs for the transport of electric power.
- **“Out of Merit Generation Unit”**, in a particular Dispatch Period, means a Generation Unit which Variable Generation Cost is higher than the System Marginal Price and, for such reason, (i) has not been dispatched in that Dispatch Period; or (ii) it has been dispatched for solving a Congestion or for providing the Ancillary Services required by the system.
- **“Opportunity Cost”** means the loss of profit of a Generator resulting from a Generating Unit or Generation Plant of such Generator being scheduled to provide one or more Ancillary Services while the Capacity providing such Ancillary Service or Ancillary Services could have been used for producing Energy.
- **“Participant Accession Date”** means the date on which the Applicant becomes a Market Participant.
- **“Participant Application Form”** means the standard form prepared by the Market Operator and to be used by a person that intend to become a Market Participant.
- **“Participant Discontinuance Date”** means the date with effect from which, in accordance with 3 and 17, that Participant ceases to be a Market Participant.

- **“Payments Calendar”** means the calendar prepared by the Market Operator indicating the dates for issuing the Preliminary Settlement Statements, the Final Settlement Statements and the Payment Notifications for the whole fiscal year.
- **“Payment Date”** means the date for payment of a Payment Notification in accordance with the Market Operator Payments Calendar.
- **“Payment Notification”** means a notification, sent by the Market Operator to a Market Participant immediately after issuing a Final Settlement Statement, informing such Market Participant, the amount it is obliged to deposit in the Market Operator Clearing Account before the Payment Date, for discharging its obligations in relation with the Final Settlement Statement.
- **“Permanent Congested Area”** has the meaning as ascribed to the term in Sub-section 7.1.1 of this Code.
- **“Permanent Firm Capacity Certificate”** means a Firm Capacity Certificate granted pursuant Clause 9.5.1.6 that can be used to register Contracts with the Market Operator involving Capacity transactions .
- **“Physical Asset”**, for the purposes of this Code, means a Generation Unit of a Generation Plant univocally identified.
- **“Preliminary Settlement Statement”** has the meaning ascribed to the term in sub-Section 8.2.1 of this Code.
- **“Preliminary Yearly Settlement Statement”** has the meaning ascribed to the term in sub-Section 12.3.1 of this Code.
- **“Regional Market or Pool”** means the agreement between the electricity systems of different countries for buying and selling and transmitting electricity.
- **“Regional Trading”** means the buying or selling electricity from or to other systems or a regional electricity market or pool using interconnectors.
- **“Renewed Firm Capacity Certificate”** means a Firm Capacity Certificate which has been re-issued by the Market Operator due to the expiration of a previous Firm Capacity Certificate.
- **“Response”** has the meaning assigned to that term in Clause 15.5.2.5.
- **“Respondent”** means a person against whom a complaint is made in a Notice of Dispute, a Response or a crossclaim or counterclaim.
- **“Secured Metering System (SMS)”** means the IT system, including hardware, software and communication channels, which retrieves information from the Commercial Metering System and transfer it electronically to the Market Operator, at pre-established times.
- **“Security Constrained Economic Dispatch (SCED)”** means an optimization process designed to supply the Demand at the lowest cost, given the operational and reliability constraints of the Generation and Transmission Network.
- **“Security Cover”** means the financial security to be provided and maintained by a Participant in the form and amount specified in 14 of this Code.
- **“Self-dispatch”**, associated with a Generation Unit, means an operative condition in which the Generator decides, by itself, the amount of MWh that are produced by the Generation Unit, without a specific instruction of the System Operator in this regard. For the avoidance of doubt, Generators which are not receiving specific instructions and/or are not directly controlled by the System Operator, are not considered as being self-dispatched.

- **“Service Provider”** means companies or institutions which provide regulated services necessary for proper market or system functioning, which are not Market Participants. They include the Transmission Service Provider, Distribution Network Service Provider and the Metering Service Provider and Independent Auction Administrator, Special Purpose Trader, but it excludes the System Operator, and Market Operator.
- **“Settlement”** means the process of calculating charges, due from Market Participants who are required to make payment, and to be paid to Market Participants who are due to receive payments, pursuant to this Code.
- **“Settlement Period”** means period of time in which the Market Operator calculates the results of the Imbalances associated with commercial transactions among Market Participants. Settlement Period for Energy is one calendar month and for Capacity is one fiscal year, or any shorter periods as it may be specified by the Authority.
- **“Settlement Statement”** means the document prepared by the Market Operator that establishes the amount to be paid by or the payment to be received by each Market Participant or Service Provider as a result of the markets administered by the Market Operator.
- **“Settlement Software”** means the suite of computer programmes used by the Market Operator to calculate the Settlement amounts pursuant to this Code.
- **“Special Purpose Trader”** has the meaning assigned to the term in Clause 2.2.5.1.
- **“Standard Operating Procedure”** means a specific procedure or set of procedures, developed by the Market Operator or by the System Operator and approved by the Authority, established for carrying out commercial operations, processes and functions as provided in this Code.
- **“Standardized Contracts”** has the meaning ascribed to the term in Clause 4.2.2.2 of this Code.
- **“Supply License or Electric Power Supply License”** means a License issued by the Authority according with the prescriptions of the Act, which allows a company selling power to consumers.
- **“Suspension Notice”** means the notification issued by the Market Operator to inform a Market Participant that it is not fulfilling all eligibility requirements to participate in the Market and that, if not corrected, the Market Participant will lose its rights to participate in the Market.
- **“Suspension Order”** means an order issue by the Market Operator pursuant to Sub-section 17.2.2.
- **“Suspended Participant”** is any Market Participant who has received and is the subject of a valid and continuing Suspension Order.
- **“System Marginal Price”** means the Variable Generation Cost of the most expensive Generation Unit which would be dispatched to supply one [1] additional MW of Demand, as determined pursuant the corresponding Commercial Code Operational Procedure developed by the System Operator, as established in Clause 6.5.1.3, or the transitory methodology established in Section 0of this Code, until such Operational Procedure will be approved by the Authority.
- **“System Operator”** means a company or entity licenced by the Authority, to provide system operation services, as established in Section 23 G of the Act.

- **“System Peak Hours”** means the hours included in the period from 10 a.m. (included) to 9 p.m. (excluded) of the months of July, August, and September. System Peak Hours comprise a total of 1,012 hours per year.
- **“System Restriction”** means a restriction imposed by the System Operator to the least cost dispatch of Generation Units in order to comply with the reliability and security criteria established in the Grid Code.
- **“Tariff Determination”** means tariff, rates and charges approved by Authority under the Act for Service Providers and Market Participants as the case may be.
- **“Temporary Firm Capacity Certificate”** means a Firm Capacity Certificate issued by Market Operator pursuant to 9.5.1.3 that can be used as a proof of commitment during the verification process or compliance with the Capacity Obligations and/or to obtain financing for a project, but cannot be used in bilateral contracts which have to be included in the Contract Register of the Market Operator.
- **“Terminated Participant”** means a Market Participant whose authorisation to participate in the Market has been terminated pursuant to a Termination Order.
- **“Termination Order”** means an order issued by the Market Operator pursuant to Clause 17.2.3.1
- **“Total Assumed Demand”** means the Total Demand plus the Demand which has been disconnected due to instructions issued by the System Operator.
- **“Total Demand”** means the total Demand of the system, calculated pursuant the formulations included in Sub-section 6.3.2.
- **“Trader”** means a Participant which has obtained a trading License from the Authority.
- **“Trading Period”** means the shortest period for which an Energy transaction or a Capacity transaction is allowed.
- **“Trading Point”** means a Metering Point at which commercial transactions (buying or selling Energy and/or Capacity) take place or may take place. Energy and Capacity transactions take place at this point, and it will be considered its Market entry or exit point for considerations of market settlement and Energy metering.
- **“Transmission”** means conveying Energy over a Transmission Network at voltages equal to or in excess of 220 kV.
- **“Transmission Constraint”** means a limit imposed on power transfer across any part of the Transmission Network due to thermal overload, voltage or stability considerations.
- **“Transmission Licensee”** means a person which has been granted a Transmission licence by the Authority, as per Article 16 of the Act.
- **“Transmission Network”** means the set of circuits, substations and associated equipment operating at voltages equal or in excess of 220 kV.
- **“Transmission Network Restriction”** means restriction imposed by the System Operator to the least cost dispatch in order to avoid one or more Congestions in the Transmission Network.
- **“Transmission Service Provider (TSP)”** means the Transmission Licensee which provides Open Access Transmission services.
- **“Urgent Amendment”** means an amendment required to be made to the Market Commercial Code for one or more of the following reasons:
  - a. to avoid, reduce the risk of or mitigate the effects of the abuse of market power;

- b. to implement regulations issued by the Authority,
  - c. to modify Sections, Clauses or Conditions which are contradictory or inconsistent with new regulations issued by the Authority;
  - d. to avoid, reduce or mitigate the effects of an unintended adverse effect of a Clause or Condition.
- **“Transmission Use of System Charges” or “Use of System Charges”** means the charges which shall be paid by the Market Participants for the use of the Transmission Network, in accordance with the Authority determinations.
  - **“Validation Checks”** means the set of evaluations, checks or verifications, performed by the Metering Service Provider, aimed to determine the appropriateness of a metered value obtained through the Commercial Metering System.
  - **“Variable Generation Cost”** means the costs of Generation Unit that change as the amount of electric power produced changes.
  - **“Website”** means the site established by the Market Operator on the world-wide web for the exchange of information amongst the System Operator, the Market Operator, the Service Providers, Market Participants, and other interested parties in accordance with such restrictions on access as may be determined from time to time by the Market Operator and the Authority.

1.2.1.2 The words and expressions used but not defined in this Commercial Code shall have the same meaning as are assigned to them in the Act and Market Rules.

## 1.2.2 INTERPRETATION

1.2.2.1 In the case of any inconsistency or contradiction of this Code with the Act or Market Rules, the provisions of the Act or Market Rules will prevail up to the extent of the inconsistency.

1.2.2.2 This Market Commercial Code complements the Grid Code and should be read in conjunction therewith.

1.2.2.3 In this Code, unless the context otherwise requires:

- a. a reference to a particular Part, Section, Clause, or Annex is to a Part, Section, Clause or Annex to this Code;
- b. the table of contents and Chapter and Section headings are for convenience only and shall be ignored in construing this Code;
- c. references to the masculine include the feminine and references in the singular include references in the plural;
- d. PKR means Pakistani Rupees;
- e. the word “include” shall be construed without limitation;
- f. a reference to a “person” includes any individual, partnership, firm, company, corporation (statutory or otherwise), joint venture, trust, association, organisation or other entity, in each case whether or not having separate legal personality;

- g. a reference to law or act shall be construed, at the particular time, as including a reference to any modification, extension, re-enactment or replacement thereof then in force; and
- h. a derivative term of any defined or interpreted term or expression shall be construed in accordance with the relevant definition or interpretation.

### **I.2.3 RIGHT OF INTERPRETATION**

- I.2.3.1 The Market Operator shall implement, apply, and enforce the provisions of this Code.
- I.2.3.2 The Market Operator has the right of interpreting this Code. The Market Operator shall be under the obligation to inform this interpretation and its justification to Authority and publish the interpretation on its Website for Market Participants or Service Providers comments. After seven days of its publication and agreeing upon the comments (if any), the interpretation would be sent to Authority for its approval. If required, the Market Operator shall draft an amendment or update the necessary Commercial Code Operating Procedures and shall publish on its Website to inform the Market Participants accordingly.
- I.2.3.3 All Market Participants and Service Providers shall abide by this Code, however nothing herein shall derogate from the rights and obligations imposed upon any person under any License a regulations issued by Authority, or the provisions in Power Purchase Agreement signed prior to this Code becoming effective.

### **I.2.4 TIMES AND DATES**

- I.2.4.1 For the purposes of this Code, “Business Day” means a day in which the Banks in Islamabad and Lahore. are operational;
- I.2.4.2 References to times of the day in this Code are to Pakistan Standard Time (PST).

## **I.3 AMENDMENTS TO THIS CODE**

### **I.3.1 MARKET COMMERCIAL CODE REVIEW PANEL**

- I.3.1.1 The duties of the Market Commercial Code Review Panel (MCCRP) in respect of this Code and the CTBCM include reviewing, proposing and approving amendments to this Code on an on-going basis and advising the Authority on specific issues related to the operation of the CTBCM.
- I.3.1.2 The MCCRP consists of 10 members, one of them without voting rights. The quorum at any meeting of the MCCRP consists of a majority of the members then appointed. Where there is a vacancy or vacancies in the MCCRP, the remaining members may exercise all the powers of the **MCCRP** so long as a quorum of the MCCRP remains in office.
- I.3.1.3 Members of the MCCRP shall:
  - a. have a level of technical or commercial knowledge and expertise in the operation of power systems and electricity markets, and shall not be members of the Market Operator or System Operator boards;

- b. in the case of members representing Market Participants, Transmission Service Providers, the System Operator and the Market Operator, be a member, officer, employee, or agent of a person in the class of persons which such member represents;
- c. in the case of members representing the Bulk Power Consumers, be a duly authorised representative of registered bodies of such consumers;
- d. in the case of members representing a Market Participant or a Transmission Service Provider or the System Operator or the Market Operator, not be a member, officer, employee or agent of a person in another class Market Participant or the Transmission Service Provider or the Market Operator or of an Affiliate of such person; except in the case of NTDC as Transmission Service Provider and System Operator who may be member, officer, employee or agent of each other until the moment the System Operator will be carved out from NTDC, if so decided by the Competent Authorities.
- e. not have served for two terms as a member of the MCCRCP. There shall not be counted as part of such terms, the period spent by any member of the MCCRCP appointed to replace a predecessor member of the MCCRCP whose term had not yet expired, provided that such term is no greater than two (2) years.

1.3.1.4 The MCCRCP will have the following composition:

- a. One representative of ex-WAPDA Generation Companies
- b. One representative of Independent Power Producers other than ARE Producers
- c. One representative of ARE Producers
- d. One representative of the Transmission Service Providers
- e. One representative of the EX-WAPDA DISCOs,
- f. One representative of K-Electric
- g. One representative of the Suppliers, other from Suppliers belonging to DISCOs (Competitive Suppliers)
- h. One representative of the Bulk Power Consumers
- i. One representative of the Traders;
- j. Two representative of the System Operator;
- k. Two of the Market Operator; and
- l. One representative named by the Authority, without voting rights

1.3.1.5 Appointment of the Market Review Panel representatives shall be as follows:

- a. The Representative of ex-WAPDA Generation Companies will be appointed by the Ministry of Energy (Power Division);
- b. The Representative of Independent Power Producers will be appointed by the Association of Independent Power Producers;
- c. The representative of the Transmission Service Providers will be appointed by NTDC;
- d. The representative of the Ex-WAPDA DISCOs will be appointed by the Association of Distribution Companies;



- e. The representative of K-Electric will be decided by K-Electric Board;
  - f. The representative of the Suppliers (other from Suppliers belonging to DISCOs) will be appointed by the Association of Competitive Suppliers.
  - g. The representative of the Bulk Power Consumers will be appointed by the Association of Bulk Power Consumers;
  - h. The representative of the Traders will be appointed by the Association of Traders; and
  - i. The representative of the SO will be appointed by NTDC or by the board of the corresponding company, in case the System Operator is carved out from NTDC; and
  - j. The representative of the Market Operator will be appointed by the Market Operator Board.
- 1.3.1.6 Until the Association of Independent Power Producers, the Association of Distribution Companies, the Association of Competitive Suppliers, the Association of Bulk Power Consumers and the Association of Traders be constituted and become operative, the Market Operator shall, in consultation with registered Market Participants who will present lists of proposed representatives for its Market Participant class, agree the representatives of the initial MCCRP.
- 1.3.1.7 The chairperson of the MCCRP shall be the representative of Market Operator.
- 1.3.1.8 The term of each member of the MCCRP shall be three years. A member of the MCCRP, whose term has expired, shall be eligible for reappointment for a further term not exceeding three years.
- 1.3.1.9 At all meetings of the MCCRP, every question shall be decided by a majority of the votes cast on the question. In case of an equality of votes, the chairperson of the MCCRP shall be entitled to a second or casting vote.
- Provided that the member specified as independent representative nominated by the Authority shall not have any vote and shall hold the position as an observer.

### **I.3.2 MARKET COMMERCIAL CODE REPORT**

- 1.3.2.1 Every six months, on the dates that shall be decided by the MCCRP, the Market Operator shall prepare a Market Commercial Code Report (MCC Report), describing the problems experienced by the Market Operator and/or the System Operator in the implementation and application of the Market Commercial Code and, if it is appropriate, the Grid Code, and the corresponding Commercial Code Operating Procedures. This report will be submitted by the Market Operator to the Authority, all Market Participants, the Service Provider and the Market Commercial Code Review Panel.
- 1.3.2.2 The MCC Report shall include:
- a. Results produced in the market;
  - b. Problems identified in the implementation of the Market Commercial Code, the Grid Code and the Commercial Code Operating Procedures;
  - c. Conflicts of interpretation with Market Participants or Service Providers;



- d. Any transitional exception in complying with the Market Commercial Code or its Commercial Code Operating Procedures, identifying the Market Participant that was assigned this exception and the reason(s) that justifies this exceptional condition; and
- e. Any other relevant matter to identify any problems in the performance, feasibility, efficiency and design of this Code and, if it is appropriate, the Grid Code.

### **I.3.3 MARKET COMMERCIAL CODE WORKING GROUP**

- I.3.3.1 The Market Operator in consultation with MCCRCP shall create a Market Commercial Code Working Group (MCCWG), as a permanent advisory group to assist the MCCRCP in fulfilling its obligations. The MCCRCP will use the MCCWG to assess any problem or gap in the Market Commercial Code and, if it corresponds, the Grid Code or procedures identified in the MCC Report,
- I.3.3.2 The Market Commercial Code Working Group (MCC Working Group) shall include representatives of Market Participants and staff of the System Operator and the Market Operator. The MCC Working Group shall also include a representative of the Transmission Service Providers when reviewing interpretation and implementation of the Grid Code or Operating Procedures.
- I.3.3.3 The MCC Working Group Operator may propose to the MCCRCP:
  - a. To accept or review an amendment proposal that has been presented to the Panel;
  - b. Amendments to correct, complete or improve the Market Commercial Code (and if it corresponds to the Grid Code); and
  - c. New or updated Commercial Code Operating Procedures for implementation of the Market Commercial Code.
- I.3.3.4 The MCCRCP may delegate to the MCC Working Group the authority to make an Urgent Amendment to this Code. The delegation of authority shall be consistent with the function of the MCCRCP and may be given in respect of any specific Urgent Amendment. In this case, the MCC Working Group shall produce the amendments in accordance with this Code.

### **I.3.4 REQUESTS FOR REVIEW OR AMENDMENT OF MARKET COMMERCIAL CODE**

- I.3.4.1 The System Operator, the Market Operator, a Service Provider, a Market Participant, the MCC Working Group or any other interested person may file a written submission (the "Amendment Submission") to the MCCRCP, to propose one or more Amendments to this Code (and/or the Grid Code) or to identify any provision of this Code in respect of which the System Operator or the Market Operator, the Service Provider, the MCC Working Group or the Market Participant or the other interested person considers that an Amendment or review may be necessary or desirable. The Amendment Submission shall include a statement of the reasons for which an Amendment of this Code may be necessary or desirable. The MCCRCP may request that the person submitting the Amendment Submission provide further particulars with respect to the Amendment Submission.

- I.3.4.2 The MCCRCP will use the MCC Working Group to a Market Commercial Code amendment proposal that has not been presented by the MCC Working Group.
- I.3.4.3 In its amendment decision, the MCCRCP will take into consideration the recommendations of the MCC Working Group.
- I.3.4.4 Within fifteen (15) Business Days of receiving the Amendment Submission, the MCCRCP shall give written notice to the person who made an Amendment Submission as to whether the proposed Amendment or the request for consideration of an Amendment or review is, in the opinion of the MCCRCP:
- a. of such a nature that consideration of the Amendment Submission is warranted; or
  - b. of such a nature that no consideration of the Amendment Submission is warranted.
- In the latter case, it shall notify the Authority in writing of its opinion that no consideration of the Amendment Submission is warranted.
- I.3.4.5 Where the MCCRCP decides to proceed with the request, it shall Publish and give notice to all Market Participants of the particulars of the Amendment Submission and, shall also give notice to the person who made the Amendment Submission and to all the Market Participants of any comments which the MCCRCP may wish to make in respect of the Amendment Submission. The notice shall invite Market Participants and other interested persons, to make, within such reasonable period as shall be specified in the notice, which shall not be shorter than ten (10) Business Days, written submissions to the MCCRCP concerning the Amendment Submission.
- I.3.4.6 The MCCRCP may, at any time notify the person who made the Amendment Submission, the Market Participants or other interested persons:
- a. to make such additional written submissions within such reasonable time as the MCCRCP determines appropriate; or
  - b. schedule and hold meetings with the person who made the Amendment Submission, Market Participants and other interested persons who filed a written submission.
- I.3.4.7 The MCCRCP shall Publish and provide notice of meetings to be held and, any other Market Participant and interested person may, at the discretion of the MCCRCP, participate in any such meetings.
- I.3.4.8 The MCCRCP shall, as soon as reasonably practicable following any meetings and consultations which may have been held, convene on one or more occasions as may be necessary to consider and vote on the Amendment Submission. The MCCRCP shall consider all submissions, both written and oral received by it within the time specified by the MCCRCP.
- I.3.4.9 Following the conclusion of the deliberations and meetings, and using as necessary the assistance of the MCC Working Group, if the MCCRCP adopts an Amendment, the MCCRCP shall prepare a written report setting out:
- a. the recommendations of the MCCRCP and the reasons for such recommendations;
  - b. where the recommendations of the MCCRCP include a proposal to amend this Code, a copy of the proposed text of the Amendment, the suggested time of

- commencement of the Amendment, the recommendations of the MCC Working Group, and a summary of any objections to the Amendment Submission which may have been contained in the written submissions or brought to the attention of the MCCRP during any meetings held;
- c. a summary of the procedure followed by the MCCRP in considering the matter;
  - d. a record of the vote of each member of the MCCRP in respect of each of the recommendations made in the report; and
  - e. a summary of any objections raised by any member of the MCCRP to the recommendations, if such objecting member so requests.
- 1.3.4.10 Upon completion of the report indicated in Clause 1.3.4.9, the MCCRP shall instruct the MO to submit it to the Authority, seeking for its approval.
- 1.3.4.11 The Market Operator shall publish the recommendations contained in the report referred to in Clause 1.3.4.9 and shall give notice thereof to all Market Participants and to the person who made an Amendment Submission to which the recommendations relate. At the request of a Market Participant, the Market Operator shall provide to the Market Participant, subject to the Market Participant paying a reasonable cost-reflective charge determined by the Market Operator, copies of all submissions received pursuant to Clause 1.3.4.4 or 1.3.4.5, together with particulars of any further submissions which were made before the MCCRP during the course of any meetings or deliberations that may have been held, provided that the Market Operator shall not disclose any Confidential Information without express written permission of the person to whom this relates.
- 1.3.4.12 Where the MCCRP recommends in the report referred to in Clause 1.3.4.9 that an Amendment be made to this Code, which is materially different from the Amendment proposed in the Amendment Submission to which the recommendation relates, a Market Participant and the person who made the Amendment Submission may, within 7 Business Days of the date of giving of notice referred to in Clause 1.3.4.13, make written submissions to the Authority in accordance with the procedures specified by the Authority objecting to the MCCRP's recommendation and setting forth the reasons for the objection.
- 1.3.4.13 As soon as reasonably practicable following receipt of the report of the MCCRP the Authority may:
- a. confirm the Amendment to this Code proposed by the MCCRP;
  - b. refuse to accept the Amendment and refer the decision back to the MCCRP for additional review, and the Authority may suggest an alternative amendment to the Amendment proposed by the MCCRP.
- 1.3.4.14 Where an Amendment is submitted to the Authority for its approval, the Authority may reject the proposed Amendment if, in its opinion, the proposed Amendment:
- a. unfairly discriminates against a Market Participant or class of Market Participants;
  - b. will limit, and not advance, competition, or prevent free entry into the wholesale competitive market;
  - c. may allow one or more Market Participants to possess market power;
  - d. may have a potential for abuse of market power by one or more Market Participants;

- e. is not conducive to efficient and economic operation of the wholesale competitive market;
- f. materially alters the framework of the CTBCM; or
- g. is not consistent with the Applicable Law or policy direction of the GoP.

**1.3.4.15** Where the Authority:

- a. confirms the recommendation to amend this Code, the Market Operator, within 5 business days after receiving notification from the Authority, shall inform the MCCRCP and publish such decision on the Website, together with a copy of the Amendment, and shall give notice of the decision to all Market Participants, the person who made the Amendment Submission to which the decision relates and any persons who made submissions. The Market Operator will prepare and publish in its Website the amended version of the Market Commercial Code.
- b. rejects the adoption of an Amendment to this Code, the Market Operator shall publish such decision on the Website and shall give notice of the decision to all Market Participants and to any person who made an Amendment Submission to which the decision relates.

**1.3.5** AMENDMENTS INITIATED BY THE MCCRCP

**1.3.5.1** Where the MCCRCP on its own initiative or recommendations of the MCC Working Group determines at any time that an Amendment to or a review of the Market Commercial Code may be necessary or desirable, it shall issue a notice (the “Review Notice”) of its intention to consider such Amendment or review together with the reasons for its determination to the Market Participants and other interested persons identified by it. The Review Notice shall invite the Market Participants and the interested persons to make, within such reasonable period as specified by the MCCRCP, written submissions to the MCCRCP.

**1.3.5.2** Clauses 1.3.4.5 to 1.3.4.13 shall apply, with such modifications as the context may require, being understood that the reference to an Amendment Submission, where applicable, shall be a reference to the Review Notice.

**1.3.6** AMENDMENTS INSTRUCTED BY THE AUTHORITY

**1.3.6.1** As per Section 23B (3) of the Act, the Authority may, for public interest reasons, direct the Market Operator to produce an amendment of the Market Commercial Code, in the Chapters, Sections or Clauses it deems appropriate.

**1.3.6.2** Within 5 business days of receiving a direction from the Authority, the Market Operator shall refer it to the MCCRCP, requesting its consideration and opinion. The MCCRCP shall analyse and debate the requested amendments, giving it maximum priority. If it deems appropriate, it will seek assistance from the MCCWG.

**1.3.6.3** Not later than 20 business days after receiving the request from the Market Operator, the MCCRCP submit to the Market Operator a report with its opinion in relation with the amendment instructed by the Authority. In the case the opinion of the MCCRCP, reflected in the report submitted to the Market Operator:

- a. is positive, and it MCCRCP agrees with the amendments instructed by the Authority. In this case, the Market Operator shall:

- i. incorporate the changes into the Market Commercial Code within 5 business days after receiving the report from the MCCRCP; and
  - ii. Publish such decision on the website, together with a copy of the Amendment, and shall give notice of the decision to all Market Participants.
- b. is negative, and if MCCRCP does not agree with the amendments instructed by the Authority. In this case, the Market Operator shall:
  - i. Notify the Authority of the opinions of the MCCRCP, which are contrary to the direction issued, indicating if the Authority wishes to re-consider its direction.
  - ii. Indicate the Authority that, unless some direction is received in contrary within the following ten (10) business days, it will proceed to amend the Market Commercial Code as per the direction received; and
  - iii. In case no additional directions from the Authority, within the time specified in clause 1.3.6.3 ii, publish the amended Market Commercial Code on the Website, together with a copy of the MCCRCP opinion, and shall give notice of the decision to all Market Participants.

### **I.3.7 URGENT AMENDMENTS**

- I.3.7.1 Urgent Amendments to this Code shall be proposed by the MCCRCP or recommended by the MCC Working Group to the MCCRCP, following such consultations, if any, with such persons as the MCCRCP or MCC Working Group, as the case may be, considers appropriate.
- I.3.7.2 Where the MCC Working Group recommends an Urgent Amendment, the MCC Working Group shall report such decision to the MCCRCP together with a copy of the text of the Urgent Amendment.
- I.3.7.3 The MCCRCP shall, within 20 Business Days of the date of receipt of the report referred to in Clause 1.3.7.2, convene to consider the report and vote to either:
  - a. confirm the Urgent Amendment, in the form proposed by the MCC Working Group or in such form as the MCCRCP deems appropriate; or
  - b. reject the Urgent Amendment.
- I.3.7.4 Where an Urgent Amendment is proposed or confirmed by the MCCRCP, the MCCRCP shall propose the text of the Urgent Amendment, publish it in the Market Operator Website and forward its decision to the Authority, for approval.
- I.3.7.5 The Authority shall consider the request for Urgent Amendment as a priority issue to decide in the shortest practicable time, either:
  - a. to confirm the Urgent Amendment, in the form proposed by the MCCRCP; or
  - b. to refuse to accept the proposed Urgent Amendment and refer it back to the MCCRCP for review, and the Authority may suggest an alternative Urgent Amendment for consideration of the MCCRCP.
- I.3.7.6 Where an Urgent Amendment is confirmed by the Authority, the Market Operator shall forthwith publish notice of such Urgent Amendment on its Website and shall give notice thereof to all Market Participants.

I.3.7.7 An Urgent Amendment shall come into force from the date of the order of the Authority, unless the Authority orders such amendment to come into force retrospectively from the date the MCCRCP approved the Urgent Amendment.

**I.3.8 AUDIT**

I.3.8.1 The activities of the MCCRCP shall be audited in accordance with procedures adopted from time to time by the Authority.

## 2. ROLES OF INSTITUTIONS IN THE CTBCM

### 2.1 OPERATORS

#### 2.1.1 MARKET OPERATOR

2.1.1.1 The Market Operator is responsible for establishing and administering the wholesale market as per the conditions established in its License. Its functions include, inter alia:

- a. Admission and registration of Market Participants and Service Providers;
- b. Review and registration of bilateral contracts between Market Participants;
- c. Registration of the Trading Points at which transactions among Market Participants take place;
- d. Registration of the Metering Points, other than Trading Points, which are necessary for proper implementation of this Code.
- e. Establishing of Firm Capacity of Generation Units and issuing of Firm Capacity Certificates;
- f. Determination of prices for the Capacity;
- g. Administering a settlement system for the Capacity and Energy Balancing Mechanisms to clear differences between actual and contracted quantities;
- h. Administering a payment system for the Imbalances of Market Participants, including the verification and registration of Security Covers; and
- i. Resolve disputes among Market Participants.

2.1.1.2 The Market Operator will also be in charge to monitor market development and effectiveness and to propose changes for enhancing its efficiency.

2.1.1.3 The Market Operator shall carry out all its activities in accordance with the provisions Act, its License, this Code, the regulations issued by the Authority and any other Applicable Documents

2.1.1.4 As per provisions of the Act, there is only one Market Operator in Pakistan.

#### 2.1.2 SYSTEM OPERATOR

2.1.2.1 The System Operator is responsible for the secure and reliable operation of the Transmission Network of Pakistan and for planning and dispatching all the generation in the system in a transparent and not discriminatory basis.

2.1.2.2 System Operator duties include, inter alia:

- a. generation scheduling, commitment and dispatch;
- b. Transmission scheduling and generation outage coordination including cross border Transmission coordination;
- c. Conducting reliable operational planning (medium and short term);

- d. Implementing the Security Constrained Economic Dispatch (SCED) for secure and economic operation of the system including Transmission congestion management;
  - e. Determination and dispatching the necessary Ancillary Services;
  - f. Calculation of the Energy marginal prices for each hour;
  - g. Keeping the system in permanent balance taken due consideration of the security and reliability constraints; and
  - h. Develop indicative long-term generation planning and Transmission planning, once these functions are effectively transferred to the SO;
  - i. Such other activities as may be required for reliable and efficient system operations.
- 2.1.2.3 The System Operator shall carry out all its activities in accordance with the provisions of the Act, its License, the Grid Code, this Code and any other Applicable Documents.
- 2.1.2.4 To ensure transparency in its operations, the System Operator shall publish planning reports, real time operational decisions, the results of the operations (dispatch) and the resulting marginal prices on its website.
- 2.1.2.5 As per provisions of the Act, there is only one System Operator in Pakistan.

## **2.2 MARKET PARTICIPANTS**

### **2.2.1 GENERAL**

- 2.2.1.1 The Market Participants are the entities which buy and / or sell Energy and/or Capacity in the wholesale market.
- 2.2.1.2 Following Categories of Market Participants are entitled to participate in the CTBCM:
- a. Generation Companies;
  - b. Suppliers;
  - c. Traders; and
  - d. BPC.

### **2.2.2 GENERATION COMPANIES**

- 2.2.2.1 Generation Companies are entities which have physical Generation Capacity installed, produce and sell electric power. Generators shall be Licensed by the Authority or, once these licences would not be required anymore, authorised by it.
- 2.2.2.2 To participate in the CTBCM, Generators shall abide by the following requirements:
- a. Power plants will be either:
    - i. Dispatchable, subject to centralized Security Constrained Economic Dispatch (SCED) by the System Operator; or



- ii. Non-dispatchable, which have to be operated in accordance to the conditions, requirements and procedures established in the Grid Code.
- b. Within their technical capabilities, they shall provide the Ancillary Services required by the System Operator, as established in the Act and the Grid Code.
- c. They shall register as Market Participants, regardless their size, provided they sell or plan to sell their Energy and/or Capacity to other Market Participants. Provided that Licensed small Generators, connected to distribution network that sell all its Capacity and Energy to a DISCO or a Trader and which are not included in the scope of the Grid Code, can opt to become Market Participant or not.

### 2.2.3 SUPPLIERS

- 2.2.3.1 Electric Power Suppliers (Suppliers or EPS) will be Licensed entities as per the 1997 NEPRA Act, which are involved in the procurement of electricity (Energy and Capacity) and selling it to end consumers, either BPCs or not, or re-selling it to other Suppliers.
- 2.2.3.2 Suppliers own or procure their Energy and Capacity and sell it through Contracts which shall be registered within the Market Operator as established in 4 of this Code.
- 2.2.3.3 As per the provisions of the Act, Suppliers could be of different types, as per the provisions established in their respective Licenses. Regardless of these differences, as established in this Code, all Suppliers shall be treated equally in the CTBCM.

### 2.2.4 TRADER

- 2.2.4.1 Electric Power Traders are Licensed entities which Import electric power (Energy and/or Capacity) or buy them from other Market Participants; and they Export it or sell it to other Market Participants, at wholesale level.
- 2.2.4.2 An Electric Power Trader can enter into an agreement with one or more Generators and sell the aggregated generation in the CTBCM through bilateral contracts. Depending on the design of the agreement, the Generators contracted by the Trader may also be Market Participants or not, although the Trader shall be a Market Participant.
- 2.2.4.3 For Imports and/or Exports, the seller or buyer, as the case may be, is exempted to be Market Participant. Export and Import activities shall be performed through a Trader that is a company registered in Pakistan and a Market Participant. For the avoidance of doubt the same regime applies to Generators which operates under a special regime in areas in which the applicability of Act is not extended.

### 2.2.5 THE SPECIAL PURPOSE TRADER

- 2.2.5.1 The Special Purpose Trader (SPT) is the registered entity which continues administering the existing PPAs signed or administered by CPPA-G.
- 2.2.5.2 The SPT operations shall be done in accordance with this Code and the SPT Commercial Code, approved by the Authority.

## 2.2.6 BULK POWER CONSUMERS

- 2.2.6.1 Bulk Power Consumers (BPCs) are consumers that are allowed to buy electric power, Energy and/or Capacity, in the wholesale market or through bilateral contracts with the Suppliers they may select.
- 2.2.6.2 Bulk Power Consumers may be exempted to be registered as Market Participants in case they decide to receive both its Energy and Capacity from the DISCO to which the consumer belongs; or to sign a Load Following Contract with a Supplier, as per the conditions set in sub-section 4.3.3 of this Code.
- 2.2.6.3 As established in the Act, the requirements (voltage, demand) to qualify as BPC will be established by the Authority.

## 2.3 SERVICE PROVIDERS

### 2.3.1 TRANSMISSION SERVICE PROVIDERS

- 2.3.1.1 Transmission Services Providers (TSP) are responsible for providing the Transmission infrastructure which enables wholesale buying and selling of electricity (Energy and/or Capacity). TSPs include NTDC, which is the largest Transmission TSP and Licensed as national grid company by the Authority, K-Electric, Provincial Grid Companies (PGCs) and Special Purpose Transmission Licensees (SPTLs).
- 2.3.1.2 Transmission Service Providers will allow Open Access to the Market Participants, signing Connection Agreements with them. They shall also provide access to the Meters and Metering Value to the authorised Metering Service Providers, allowing them to comply with their obligations, as indicated in this Code. The TSPs will publish information related to network availability.
- 2.3.1.3 Transmission Licensees shall conduct their operations according with the prescriptions of the Grid Code, this Code and comply with the Transmission standards stated in their Licenses, set by the Authority. Transmission Licensees shall register with the Market Operator.

### 2.3.2 DISTRIBUTION NETWORK SERVICE PROVIDERS

- 2.3.2.1 Distribution Network Service Providers are the Licensed entities which develop and operate distribution network infrastructure, enabling Generators and or BPCs connected to such network to participate in the wholesale market.
- 2.3.2.2 Distribution Network Service Providers shall ensure **Open Access** to their network and will publish information related to network availability.
- 2.3.2.3 Distribution Network Service Providers shall be registered with Market Operator.

### 2.3.3 METERING SERVICE PROVIDERS

- 2.3.3.1 The Metering Service Provider(s) (MSP) are the entities, authorized by the Authority, responsible to collect all metering information required by the Market Operator to perform the settlement functions; to assess their completeness and consistency and to transfer them to the Market Operator through electronic means, with the established periodicity,

## 2.4 POWER PROCUREMENT

### 2.4.1 THE INDEPENDENT AUCTION ADMINISTRATOR

2.4.1.1 The Independent Auction Administrator (IAA) is the registered entity which facilitates the Suppliers which sells electricity to consumers at regulated prices to comply with their Capacity Obligations, as established in 11 of this Code, through the procurement of new Capacity and/or Energy.

2.4.1.2 The main tasks of IAA include:

- a. Consolidate the requirement provided by each involved Supplier;
- b. Development of the Procurement Plan, based on the consolidated requirements and taking into consideration the Indicative Generation Capacity Expansion Plan (IGCEP);
- c. Obtain the required regulatory approvals for the Procurement Plan;
- d. Prepare standard bidding documents and procurement Contracts;
- e. Conduct competitive auctions for the approved Procurement Plan;
- f. Assist the involved Suppliers in finalizing the bilateral Contracts with the Generation companies which have been awarded in the auction.

## 3. MARKET PARTICIPATION

### 3.1 MARKET PARTICIPANT ELIGIBILITY REQUIREMENTS

- 3.1.1.1 A person who intends to buy or sell electric power (Energy and/or Capacity), or to participate in the CTBCM, unless exempted by the prescriptions of this Code, shall register as a Market Participant with the Market Operator, in accordance with this Chapter of the Market Commercial Code.
- 3.1.1.2 A Market Participant is a company or person authorised to participate in the Market and that fulfils the following requirements:
- a. The Company or person
    - Has a generation License or is authorised by the Authority as a Generator; or
    - Has a Electric Power Supplier License; or
    - Has a trading License; or
    - Owns and operates Captive Generation; or
    - Is a BPC; or
    - Is an authorised company from another country or territory in which the NEPRA Act is not applicable, which participates in Regional Trading through a contract with a Market Participant located in Pakistan; or once the Pakistan Market becomes a member of a Regional Pool, is a member of the Regional Pool and it has been agreed that such members may participate in the national Market and has been authorised by the Authority.
  - b. The Market Participant has a Commercial Metering System in each Connection Point, in accordance with the prescriptions of the Grid or the Distribution Code, as it corresponds, and this Code; and, if applicable has a valid Connection Agreement with the Transmission or Distribution Network Service Provider.
  - c. The Market Participant has submitted an Admission Application to the Market Operator, which has been considered appropriate, and it has been included in the Market Participant Register, as established in this Code.
- 3.1.1.3 Licensed or authorized small Generators, connected to the Distribution Network, which sell all its Capacity and Energy to a DISCO or a Trader and which are not included in the scope of the Grid Code, are exempted of the obligation to register as Market Participants, although they are allowed to be registered in cases they intend to do so.
- 3.1.1.4 If at any time, a Market Participant ceases to be eligible to be registered as a Market Participant in accordance with this Code, the Market Participant shall inform the Market Operator and, as soon as practicable, the Market Operator shall issue a Suspension Notice, in accordance with this Code.

### 3.2 RIGHTS AND OBLIGATIONS OF THE MARKET PARTICIPANTS

- 3.2.1.1 A Market Participant has the following obligations:
- a. Obey instructions of the System Operator, except when such instructions may endanger its equipment or safety of its staff, within the limits established in the Grid Code;

- b. If it corresponds, provide the Ancillary Services required by the system, as established in the Grid Code;
- c. Submit to the System Operator and the Market Operator in time and to the best of its knowledge the information established in the Grid Code and this Code or may require as necessary to adequately carry out its functions, and notify as soon as possible any change in such information;
- d. Pay in time the charges that result from market operation and services [reference to schedule of charges], as a result of the settlement and billing process in accordance with this Code;
- e. Maintain a Security cover for an amount not less than the quantity informed by the Market Operator; and
- f. Maintain a bank account for the administration of the market payment system.

3.2.1.2 Each Market Participant has the following rights:

- a. Open Access to non-discriminatory Transmission and Distribution services, in accordance with the Grid Code and the Distribution Code;
- b. Participate in the Energy and Capacity Balancing Mechanisms;
- c. Non-discriminatory system operation and market operation services;
- d. If it corresponds, be compensated for providing Ancillary Services or Mut Run Generation, as established in this Code;
- e. Access to the reports and non-confidential information in the website of the System Operator and the Market Operator, which are defined as non-confidential in this Code;
- f. Submit complaints to the System Operator or to the Market Operator or to the Authority when the Market Participant considers that the System Operator or the Market Operator is not complying with the Market Commercial Code or the Grid Code, including the necessary justification.

### **3.3 PROCEDURES TO BECOME MARKET PARTICIPANT**

#### **3.3.1 APPLICATION TO BECOME MARKET PARTICIPANT**

3.3.1.1 An Applicant wishing to become a Market Participant shall submit to the Market Operator:

- a. a completed Admission Application;
- b. the information set out in the Admission and Participation Market Procedure;
- c. a non-refundable application processing fee, as approved by the Authority; and
- d. where appropriate, initialled draft of a Transmission or Distribution Connection Agreement, as it corresponds, or a declaration that the involved Facility of the Applicant is connected to the Transmission or Distribution Network.

3.3.1.2 The Market Operator shall make publicly available in its web page the following information, in its most current form:

- a. The form of Market Participant Admission Application;

- b. This Market Commercial Code and the Grid Code, along with their associated Commercial Code Operational Procedures;
  - c. Standard Market Participation Agreement drafts; and
  - d. The amount of a non-refundable fee charged by the Market Operator, in accordance with decisions issued by the Authority, to an Applicant for processing an Admission Application.
- 3.3.1.3 An Applicant intending to be Registered in more than one of the Categories defined in Clause 2.2.1.2 is entitled to submit to the Market Operator a single Admission Application, provided the information to be submitted contains all required information of each activity in which it requires Registration.
- 3.3.1.4 In the case the Admission Application submitted by an Applicant involves more than one of the Categories defined in Clause 2.2.1.2, the Market Operator shall process such Application as if the Market Participant had submitted separate Applications for each of the Categories involved.
- 3.3.1.5 The Market Operator shall develop a Commercial Code Operational Procedure detailing the documents to be furnished for each Category of Market Participant.

### 3.3.2 APPLICATION PROCESS

- 3.3.2.1 Within five [5] Business Days of receiving an Admission Application along with the other information specified in this Code, the Market Operator shall send a written notification to the Applicant:
- a. Stating that it has received the Admission Application, the other Agreements, if any, and the non-refundable processing fee; and
  - b. If applicable, notifying the amount of the Security Cover pursuant the provisions stated in 14 of this Code.
- 3.3.2.2 Within 5 Business Days of receipt of notification from the Market Operator pursuant to Clause b, specifying the amount of Security Cover required to be furnished by the Applicant, the Applicant shall furnish to the Market Operator a proposal for a provision of the Security Cover.
- 3.3.2.3 Within seven [7] Business Days after receipt of the proposal of the Applicant pursuant to Clause 3.3.1.1, the Market Operator shall notify the Applicant whether:
- a. the Applicant's Admission Application is not in accordance with any of the requirements established in this Code or the associated CCoP; and/or
  - b. the Applicant has not submitted all the required information, and it is required to supply such information; and/or
  - c. the Applicant has to supply additional information or documents in connection with its Admission Application; and/or
  - d. the metering systems installed by the Applicant are not in accordance with the provisions of this Code or the Grid Code, and, if it corresponds, the Applicant has to install additional Commercial Metering Systems at one or more points, which will be identified in the notification, for allowing its registration in one or more categories; and/or

- e. Applicant has to install the Applicant's proposal regarding Security Cover is not in accordance with Clause (to be defined when Chapter 16 will be drafted).
- 3.3.2.4 If the Market Operator requests additional information or documents pursuant to Clause 3.3.2.3 or notifies the Applicant that it has to install additional Commercial Metering Systems or that the proposal for the Security Cover is not acceptable, the Applicant shall provide such additional information, documents, or install the additional Commercial Metering Systems or submit a revised proposal for a Security Cover or re-submit a completed Admission Application, as the case may be, at the earliest possible date.
- 3.3.2.5 In cases an Applicant has not submitted all additional information, documents a proposal for the Security Cover, or has not installed the required Commercial Metering Systems, as the case may be, pursuant to Clause 3.3.2.4 within 3 months of notification by the Market Operator, the Applicant's Admission Application will automatically lapse, provided that such lapse of the Admission Application shall not prevent such Applicant applying again to the Market Operator, and the Admission Application submitted again by such Applicant shall be treated as a new Admission Application.

### 3.3.3 PROCEDURES FOR APPROVAL / REJECTION

- 3.3.3.1 The Market Operator may reject an Admission Application, for one or more of the Categories for which the Applicant has submitted a request, when:
- a. the Applicant requires a Licence and does not possess such Licence;
  - b. the Applicant has not supplied all of the information or installed the Commercial Metering Systems required by the Market Operator pursuant Clause 3.3.2.3 within 3 months of initial submission of Admission Application;
  - c. the revised proposal of the Applicant for the provision of the Security Cover is not, in the Market Operator's sole discretion, in accordance with the requirements specified Sub-section (to be defined when Chapter 16 will be drafted) and the Market Operator informs the Applicant the reason for the rejection of the provision of the Security Cover;
  - d. the Applicant has previously been Market Participant, against whom the Market Operator has issued a Termination Order and the reasons which motivated such order have not yet been remedied; and / or there are outstanding debts from its previous participation in the Market.
  - e. where appropriate, the conditions of the Transmission or Distribution Connection Agreement are not acceptable to the Market Operator or the System Operator;
- 3.3.3.2 If the Applicant fulfils the requirement specified in this Code and the associated CCoP, the Market Operator shall accept the Admission Application of an Applicant and shall forward to the Applicant a Market Participation Agreement, in case such Market Participation Agreement had not been attached to the Market Participant Admission Application.
- 3.3.3.3 If applicable, the Market Operator shall also send the approved form in which Security Cover must be furnished by the Applicant and copies of such other Agreements, if any, submitted by the Applicant, as the Market Operator agrees to enter into, in final form for the Applicant to sign and return to the Market Operator.

### 3.3.4 FINAL STEPS TO BECOME A MARKET PARTICIPANT

- 3.3.4.1 Upon receipt of a Market Participation Agreement, the approved form and amount of the Security Cover, and other Agreements, if any, forwarded by the Market Operator pursuant to Clause 3.3.3.2 for the Applicant's signature, the Applicant shall:
- a. Execute such Market Participation Agreement, if not previously executed and attached to the Market Participant Admission Application, and other Agreement(s) as supplied by the Market Operator, and return them to the Market Operator;
  - b. Execute a Transmission or Distribution Connection Agreement, where appropriate, submitting a copy to the Market Operator; and
  - c. Furnish to the Market Operator the required Security Cover as indicated in Clause 3.3.3.3.
- 3.3.4.2 On receipt of such Market Participation Agreement and other Agreement(s), if any, duly executed by an authorised official of the Applicant, and the Security Cover, the Market Operator, no later than five [5] Business Days from the date of receipt of such documents, shall issue confirmation to the Applicant confirming the status of the Applicant to be of a Market Participant.
- 3.3.4.3 Concurrent to the Market Operator's issuance of the confirmation, the Market Operator will also grant the new Market Participant access to the secured section of its Website.
- 3.3.4.4 The Applicant shall be a Market Participant with effect from the date of the Market Operator's confirmation pursuant to Clause 3.3.4.2.
- 3.3.4.5 Upon the Applicant becoming a Market Participant, the Market Operator shall:
- a. Notify to the Market Participant the names of all other Market Participants and their contact details;
  - b. Notify to all other Market Participants, specifying the name of the Market Participant newly admitted, its notice details and its Market Participant Accession Date.
  - c. Give the Market Participant a unique identification number.

### 3.3.5 RIGHTS FOR APPEAL AND RECONSIDERATION

- 3.3.5.1 An Applicant may challenge a decision by the Market Operator to reject its Admission Application pursuant to Clause 3.3.3.1, and may use the Dispute Resolution procedures set out in 15 of this Code for this purpose.
- 3.3.5.2 In cases the Applicant does not agree with the decision finally taken by the application of the Dispute Resolution procedures set out in 15 of this Code, it is entitled to appeal such decision to the Authority.



## **3.4 MARKET PARTICIPANT REGISTRATION**

### **3.4.1 MARKET PARTICIPANTS REGISTER**

- 3.4.1.1 The Market Operator shall organise, maintain and publish in its website a register of Market Participants and Applicants, called the Market Participants Register. The Market Participants Register shall identify the Market Participant status (active, suspended or notified for withdrawal).
- 3.4.1.2 Upon admitting a Market Participant in one or more of the Categories for which the Applicant has submitted an Application, the Market Operator shall record the Market Participant's information, as contained in the Market Participant's Admission Application in the Market Participants Register.
- 3.4.1.3 The Market Participants Register shall clearly indicate the Categories in which a Market Participant is registered.
- 3.4.1.4 The Market Operator shall update the Market Participants Register upon entry of a new Market Participant, to indicate Suspension Notice and to eliminate a Market Participant upon the date when such Market Participant ceases participation.
- 3.4.1.5 For Applicants, the Market Operator will include in the Market Participants Register the date on which the application form was presented and current status of processing the application.

### **3.4.2 MARKET PARTICIPANT'S ONGOING REPORTING OBLIGATIONS**

- 3.4.2.1 Each Market Participant has an ongoing obligation to inform the Market Operator of any material changes relevant to its assets or circumstances as described in its Admission Application made pursuant to Clause 3.3.1.1, and any modification to the technical or operational characteristics of the equipment it owns and is connected.
- 3.4.2.2 If a Market Participant fails to inform the Market Operator of a material change in the information provided with its Admission Application in compliance with Clause 3.4.2.1, which material change may have a materially adverse effect on the buying and selling obligations of other Market Participants, the Market Operator, may suspend or terminate the Market Participant's rights in accordance with 17 of this Code.

### **3.4.3 UPDATES TO THE MARKET PARTICIPANTS REGISTER**

- 3.4.3.1 On being informed of a change in the filed information in accordance with clause 3.4.2.1, the Market Operator shall within two [2] Business Days update the relevant information in the Market Participants Register.

## **3.5 TERMINATION OF MARKET PARTICIPATION**

### **3.5.1 WITHDRAWAL BY MARKET PARTICIPANT**

- 3.5.1.1 A Market Participant may at any time cease to be a Market Participant upon:
  - a. Giving notice of not less than two [2] months in writing to the Market Operator of that intention;

- b. Cancel all its bilateral agreements with other Market Participants, withdrawing them from the Contract Register, as established in Section 4.6.
  - c. Complying with the requirements of Clause 3.5.1.2 below; and
  - d. Obtaining the prior written consent of the Authority to its ceasing to be a Market Participant, in cases this consent is required by the existing regulation. Its withdrawal shall take effect only on such terms and conditions as the Authority may determine.
- 3.5.1.2 The requirements to be fulfilled by the Market Participant prior to its withdrawal, pursuant to Clause 3.5.1.1 above are:
- a. All amounts due and payable by the Market Participant under or pursuant to this Code and the Grid Code before the Market Participant Termination Date shall have been paid in full;
  - b. The Market Participant shall not be in breach of any legal requirement or any condition of any applicable exemption by ceasing to be a Market Participant; and
  - c. Any outstanding breach by the Market Participant of this Code, the Market Participation Agreement or the Grid Code which is capable of remedy shall have been remedied.
- 3.5.1.3 Notwithstanding compliance with Clause 3.5.1.2 above, the Market Participant shall remain subject to and liable for all its obligations and liabilities as a Market Participant which were incurred or arose prior to the Discontinuance Date on which it ceases to be a Market Participant, regardless of the date on which any claim relating thereto may be made.
- 3.5.1.4 Withdrawal by a Market Participant shall result in the automatic termination of that Participant's Market Participation Agreement and the elimination of all its Contracts from the Market Operator's Contracts Register.

### 3.5.2 TERMINATION DECIDED BY THE MARKET OPERATOR

- 3.5.2.1 The Market Operator may decide to cancel the participation of a Market Participant in accordance with the prescriptions stated in 17 of this Code.

## 4. CONTRACTS AND CONTRACT REGISTRATION

### 4.1 CONTRACT MARKET

#### 4.1.1 TRADING OF ENERGY AND CAPACITY

4.1.1.1 In the CTBCM, Energy and Capacity buying and selling among Market Participants shall be performed through Contracts which shall be registered with the Market Operator. The Contract Market shall include:

- a. All bilateral buying and selling between Market Participants; or
- b. Bilateral buying and selling between a Market Participant and entities located in foreign countries; or
- c. Bilateral buying and selling between a Market Participant and companies which operate under a special regime in areas where the applicability of Act is not extended; or
- d. Multilateral buying and selling within a Regional Pool to which Pakistan forms part;

Provided that, in cases b), c) or d) the Authority has issued the corresponding authorization.

4.1.1.2 The Market Operator shall develop an operational procedure describing the timetable, format and mechanisms to exchange information for the Contract Market, as well as the verification and tests that shall be performed to ensure the Contract is in accordance with this Code.

4.1.1.3 All contracts shall be designed to ensure that all Energy and Capacity is bought or sold through contracts or through the Balancing Mechanisms for Energy and Capacity defined in this Code, which will be used to settle differences between actual and contracted quantities.

#### 4.1.2 MANDATORY CLAUSES

4.1.2.1 All Contracts, to be registered with the Market Operator, must include a clause or an annex in which both parties accept to abide to the Market Rules, this Code, the Grid Code and, if it corresponds, the Distribution Code.

4.1.2.2 All Contracts in which the seller is a Generator or a Trader which is representing Generators shall include a clause in which the Seller in the contract accepts to provide all Ancillary Services defined in the Grid Code, if the contracted generation has the technical capability and equipment to do so, without any additional payment other than those explicitly indicated in 7 of this Code. This obligation will be considered included in the contract and, therefore, only the payments reflected in this Code shall be considered in the settlement process.

4.1.2.3 All contracts must include a clause in which both parties accept to use the quantities in the Settlement Statement of the Market Operator as transaction quantities, in accordance to this Code and the operational procedures associated with this Code (CCOPs). The review of the settlement data and document or any related dispute shall be in accordance with this Code.

## 4.2 CONTRACT FORMATS

### 4.2.1 GENERAL REQUIREMENTS FOR CONTRACTS

- 4.2.1.1 Contracts shall be bilaterally agreed between Seller and Buyer and they may involve Energy, Capacity or both products simultaneously. The transactions for each of these two products shall be undoubtedly specified for each Trading Period.
- 4.2.1.2 For the application of this Code:
- a. The Energy Trading Period is defined as one hour.
  - b. The Capacity Trading Period is defined as one day, starting at 0:00 a.m. and ending at 23:59 of the same day.
- 4.2.1.3 The Capacity transactions, properly registered with the Market Operator, will be used both for:
- a. Verifying compliance with the ex-ante Capacity Obligations of the Market Participants; and
  - b. Perform the Capacity Balances of the Market Participants in the Balancing Mechanism for Capacity and verification of ex-post Capacity Obligations.
- 4.2.1.4 Capacity transactions shall be of any of the following types:
- a. **Guaranteed Capacity:** In this case, the seller will assume all the obligations associated with Capacity Imbalances that may appear in the Balancing Mechanism for Capacity, which are associated with the value of Capacity sold, as it is established in 10 of this Code.
  - b. **Non-guaranteed Capacity:** In this case, the obligations associated with Capacity Imbalances that may appear in the Balancing Mechanism for Capacity, which are associated with the value of Capacity sold, as it is established in 10 of this Code, remain under the buyer side.

For the avoidance of doubt, Capacity transactions, either Guaranteed and Non-guaranteed shall be credited to the buyer for compliance with the Capacity Obligations of the buyer, as specified in 11 of this Code.

### 4.2.2 TYPE OF CONTRACTS

- 4.2.2.1 The Contracts agreed between seller and buyer can be of two types:
- a. Standardized Contracts
  - b. Customized Contracts
- 4.2.2.2 Standardized Contract are contracts in which the amounts of Energy and Capacity are bought and sold in pre-defined forms and/or quantities. These types of Contracts are explicitly defined in Section 4.3 of this Code.
- 4.2.2.3 In cases a Standardized Contract is used, and the parties formally declare this during the registration process, it will not be necessary to disclose the signed bilateral Contract to the Market Operator, being enough to provide the information indicated in this Code to proceed to its registration.

4.2.2.4 Customized Contracts are contracts that cannot be considered Standardized Contracts. In cases when Customized Contracts are used, the Market Operator will require the parties to provide all information it deems necessary to ensure the Contract can be properly settled at the Balancing Mechanism for Energy and Capacity, as it corresponds, and, therefore, it can be registered.

For the avoidance of doubt:

- a. The Market Operator, at its sole discretion, may require reviewing the original Contract signed between the parties in order to assess the implication of certain clauses or provisions in the settlement process;
- b. The Market Operator will not be allowed to review the prices or other commercially sensitive information agreed between the parties to the extent this information is not necessary to take a reasoned decision; and
- c. All the information received by the Market Operator, other than the information to be incorporated into the Contract Register shall be considered confidential and will not be disclosed to any third party. If requested by one or both parties, a non-disclosure agreement (NDA) shall be signed by the Market Operator with the involved Market Participants.

4.2.2.5 Following types of Contracts are consider Standardized Contracts in this Code.

- a. Generation Following Supply Contract
- b. Capacity and Associated Energy Supply Contracts
- c. Load Following Supply Contracts
- d. Financial Supply Contract with Fixed Quantities

### **4.3 CHARACTERISTICS OF STANDARDIZED CONTRACTS**

#### **4.3.1 GENERATION FOLLOWING SUPPLY CONTRACT**

4.3.1.1 In a Standardized Generation Following Supply Contract, the Seller sells:

- a. A predefined percentage of the Capacity of the Physical Asset or assets; and
- b. A predefined percentage of the Energy injected into the grid

4.3.1.2 This contract has the following characteristics:

- a. The seller is a Generator or a Trader and the buyer is a Supplier or a Trader;
- b. The Contract is associated to a Physical Asset or group of physical assets, univocally identified;
- c. The Generator is subject to Centralized Dispatch, as per the terms established in the Grid Code and this Code and it declares that it will not exercise any prerogative for self-dispatching it may be applicable to it by the Grid Code or this Code.
- d. The amount of Energy bought and sold is a pre-defined percentage of all the Energy injected into the grid by the associated Generation Plant at each Trading Period;
- e. The amount of Capacity bought and sold is a pre-defined percentage of the Firm Capacity Certificates issued by the Market Operator, associated to the Physical Asset or assets associated with the Contract;

- f. The percentages used for the Capacity and the Energy can be different, including the values of zero [0%] and one hundred [100%];
- g. The Capacity bought and sold is Non-Guaranteed; and
- h. Eventual revenues that the Generator is entitled to receive for the provision of Ancillary Services, by the application of the provisions stated in 7 of this Code shall be assigned to the buyer; and
- i. The duration of the Contract is, at least, two (2) years.

4.3.1.3 Following information shall be provided by the parties during the registration process:

- a. Identification of the involved Physical Asset or assets and the corresponding Trading Points involved in the transaction;
- b. Percentage of the total Energy injected into the grid that the seller is selling to the buyer;
- c. Amount of Firm Capacity Certificates, associated Physical Asset or assets involved in the transaction, indicating the numbers of such certificates;
- d. Percentage of the total Capacity, backed by Firm Capacity Certificates, that the Generator is selling to the buyer; and
- e. The duration of the Contract

## 4.3.2 CAPACITY AND ASSOCIATED ENERGY SUPPLY CONTRACTS

4.3.2.1 The Standardized Capacity and Associated Energy Supply Contract is relatively similar to the Generation Following Supply Contracts, but it can be used also by BPCs. In these Contracts the seller sells:

- a. A predefined percentage of the Capacity of the Physical Asset or assets; and
- b. A predefined percentage of the Energy injected into the grid.

4.3.2.2 This contract has the following characteristics:

- a. The seller is a Generator or a Trader and the buyer is a Supplier, a Trader or a BPC;
- b. The Contract is associated to a Physical Asset or group of physical assets, univocally identified;
- c. The Generator is subject to Centralized Dispatch, in the terms established in the Grid Code and this Code. The Generator may exercise prerogative for self-dispatching, in the cases prescribed by the Grid Code or this Code, if such exemption to Centralized Dispatch is applicable to it.
- d. The amount of Energy bought and sold is a pre-defined percentage of all the Energy injected by the involved Generation Plant at each involved Trading Period;
- e. The amount of Capacity bought and sold is a pre-defined percentage of the Firm Capacity Certificates issued by the Market Operator, associated to the Physical Asset or assets associated with the Contract;
- f. The percentages used for the Capacity and the Energy can be different, including the values of zero [0%] and one hundred [100%];

- g. The Capacity bought and sold can be Guaranteed or Non-Guaranteed, as agreed by the parties;
  - h. Eventual revenues that the Generator is entitled to receive for the provision of Ancillary Services, by the application of the provisions stated in 7 of this Code may be assigned to the buyer or the seller, as per information provided by the parties and registered with the Market Operator; and
  - i. The duration of the Contract is, at least, two (2) years starting from the start date of the contract.
- 4.3.2.3 Following information shall be provided by the parties during the registration process:
- a. Identification of the involved Physical Asset or assets involved in the transaction;
  - b. Percentage of the total Energy injected into the grid that the seller is selling to the buyer;
  - c. Amount of Firm Capacity Certificates, associated with Physical Asset or assets involved in the transaction;
  - d. Percentage of the total Capacity, backed by Firm Capacity Certificates, that the seller is selling to the buyer;
  - e. The Capacity sold and bought shall be Guaranteed;
  - f. Eventual revenues that the Generator is entitled to receive for the provision of Ancillary Services, by the application of the provisions stated in 7 of this Code may be assigned to the buyer or the seller, as per information provided by the parties and registered with the Market Operator; and
  - g. The start date and duration of the Contract.

### 4.3.3 LOAD FOLLOWING SUPPLY CONTRACTS

- 4.3.3.1 In the Standardized Load Following Supply Contract the seller sells all the Energy and Capacity taking by the buyer at a set of pre-defined Trading Points. The seller assumes all the eventual obligations of the buyer in relation with the Balancing Mechanisms for Energy and Capacity, and the compliance with the Capacity Obligations imposed on the buyer.
- 4.3.3.2 This contract has the following characteristics:
- a. The seller is a Generator, a Base or Competitive Supplier or a Trader
  - b. The buyer is a Competitive Supplier, a Trader or a BPC, and the Trading Points involved in the Contract are demand points: The Energy always flow from the seller side to the buyer side;
  - c. The contract is associated to a set of pre-defined Trading Points, which shall be univocally identified. The Contract is not necessarily associated to a Physical Asset or group of physical assets;
  - d. The amount of Energy bought and sold is the total Energy taken by the buyer, at each Energy Trading Period, at all the identified Trading Points;
  - e. The amount of Capacity bought and sold is the total Capacity used by the buyer, at any Capacity Trading Period, aggregated over all the identified Trading Points;
  - f. The Capacity bought and sold is Guaranteed Capacity;

- g. Eventual revenues that the seller is entitled to receive for the provision of Ancillary Services, by the application of the provisions stated in 7 of this Code are retained by the seller; and
- h. The duration of the Contract is, at least, two (2) years starting from the start date of the contract.

4.3.3.3 Following information shall be provided by the parties during the registration process:

- a. The start date and duration of the Contract;
- b. Identification of the Trading Points involved in the transaction;
- c. Amount of Firm Capacity Certificates that the Seller assigns to the buyer to back the transaction, which shall not be lower than the value indicated in d. The Status of these Firm Capacity Certificates will be changed to “Blocked” and they cannot be used for by the Seller to back any other Capacity Transaction until they will be unblocked according with the prescriptions of this Code.
- d. Maximum value of the demand aggregated over all the Trading Points in the System Peak Hours of the last year.. This value shall be:
  - i. Certified by the Metering Service provider; or
  - ii. Certified by the Distribution Licensee, in case the Metering Service Provider does not have historical values at one or more Trading Points; or
  - iii. A formal declaration of the buyer, stating its best estimation of the maximum value of the aggregated demand, in the cases that neither the Metering Service Provider nor the Distribution Licensee are able to certify such value.

#### 4.3.4 FINANCIAL SUPPLY CONTRACT WITH FIXED QUANTITIES

4.3.4.1 In the Standardized Financial Supply with Fixed Quantities Contract the seller sells pre-defined quantities of Energy and/or Capacity at each Energy and/or Capacity Trading Period.

4.3.4.2 This contract has the following characteristics:

- a. Seller and buyer shall be registered as Market Participants;
- b. The transaction is performed at Market Participants level. All or a predefined group of Trading Points of each Market Participant are involved in the transaction;
- c. The amount of Energy bought and sold at each Energy Trading Period shall be a single numerical value, expressed in MWh. The numerical values for the Energy bought and sold may be modified during the duration of the Contract, following the procedures established in Section 4.5.6 of this Code.
- d. For settlement of eventual Imbalances in the Balancing Mechanism for Energy, the Energy bought and sold at each Energy Trading Period shall be:
  - i. Considered to be sold by the seller, regardless it has been produced by the seller or not;
  - ii. Considered to be bought by the buyer, regardless it has been used (consumed) by the buyer or not;



- e. The amount of Capacity bought and sold at each Capacity Trading Period shall be a single numerical value, expressed in MW, backed by Firm Capacity Certificates. The numerical values for the Capacity bought and sold cannot be modified during the duration of the Contract except in those cases in which the number of Firm Capacity Certificates of the seller are reduced after a certificates renewal;
- f. The Capacity bought and sold can be “Guaranteed Capacity” or “Non-guaranteed Capacity”, as it is agreed among the parties;
- g. For settlement of eventual Imbalances in the Balancing Mechanism for Capacity, the Capacity bought and sold at each Capacity Trading Period shall be:
  - i. Considered to be sold by the seller and procured by the buyer in full, regardless the actual availability of the Physical Assets involved in the Firm Capacity Certification if the transaction has been informed as “Guaranteed Capacity”; or
  - ii. Considered to be sold by the seller and procured by the buyer, conditional to the actual availability of the Physical Assets involved in the Firm Capacity Certification, if the transaction has been informed as “Non-guaranteed Capacity”.
- h. Eventual revenues that the seller is entitled to receive for the provision of Ancillary Services, by the application of the provisions stated in 7 of this Code are retained by the seller; and
- i. The duration of the Contract is, at least, two (2) years.

For the avoidance of doubt, in the case the seller is a Generator, the registration of a Financial Supply with Fixed Quantities Standardized Contract with the Market Operator does not grant any Self-dispatch prerogative to the involved Generator.

4.3.4.3 Following information shall be provided by the parties during the registration process:

- a. Identification of the buyer and seller;
- b. Total duration of the Contract
- c. Amount of the Energy sold and bought by the parties, at each Energy Trading Period, over the complete duration of the Contract;
- d. Amount of the Capacity sold and bought by the parties, at each Capacity Trading Period, over the complete duration of the Contract;
- e. Identification of the Firm Capacity Certificates that the Seller sells to the Buyer to back the Capacity transaction, at each Capacity Trading Period.
- f. Explicit indication that the bought and sold Capacity shall be considered Guaranteed or Non-Guaranteed; and
- g. A statement indicating if the amounts of Energy bought and sold, as per clause c shall be considered valid for the whole duration of the Contract or they can be periodically adjusted as per the applications of the provisions stated in Section 4.5.6.

## 4.4 CUSTOMIZED CONTRACTS

- 4.4.1.1 Customized Contracts can be bilaterally agreed between buyer and seller, involving buying and selling of Energy, Capacity or both products simultaneously. They can have the clauses, form, and format the parties have agreed.
- 4.4.1.2 In order the Contract is acceptable to be registered by the Market Operator, it shall comply with following requirements:
  - a. The duration of the Contract is, at least, two (2) years starting from the start date of the contract.
  - b. It incorporates the mandatory clauses indicated in Sub-section 4.1.2 or, alternatively, both parties provide to the Market Operator a signed formal declaration stating that such clauses have been incorporated into the Contract;
  - c. The Energy bought and sold between the parties is in accordance with the requirements stated in Sub-section 4.4.2 of this Code;
  - d. The Capacity bought and sold between the parties is in accordance with the requirements stated in Sub-section 4.4.3 of this Code; and
  - e. The parties provide all the information required by the Market Operator to ensure the Contract can be properly settled in both the Energy and Capacity Balancing Mechanisms.

## 4.4.2 CONTRACTS INVOLVING ENERGY TRANSACTIONS

- 4.4.2.1 Energy can be bought and sold (bought and sold) between Market Participants, through a Customized Contract, at each Energy Trading Period. Energy transactions between Market Participants shall be clear and undoubtedly specified for each Energy Trading Period.
- 4.4.2.2 The Energy transactions shall be specified as:
  - a. A fixed quantity, expressed in kWh Or any of its multiples, for each Energy Trading Period; or
  - b. A percentage of metered Energy, at a registered Trading Point (either purchased or sold), for each Energy Trading Period; or
  - c. Other formula that clearly establishes the calculation and where the Market Operator has, before the settlement process, all the necessary data for its calculation.
- 4.4.2.3 The allowed Energy transactions shall not be conditional to any event or value which are not explicitly stated in this Code.
- 4.4.2.4 For the avoidance of doubt, Energy transactions which involves a fixed quantity of Energy which should be produced by a pre-defined Physical Asset or group of Physical Assets (Self-dispatch), are not allowed in the CTBCM, unless explicitly permitted in this Code.

#### 4.4.3 CONTRACTS INVOLVING CAPACITY TRANSACTIONS

- 4.4.3.1 Capacity can be bought and sold between Market Participants at each Capacity Trading Period. Capacity transactions shall be clear and undoubtedly specified for each Capacity Trading Period.
- 4.4.3.2 All Capacity transactions in the CTBCM shall be backed by Firm Capacity Certificates issued by the Market Operator. The Firm Capacity Certificates issued by the Market Operator shall be the base to determine allowed Capacity transactions.
- 4.4.3.3 The Capacity transactions shall be specified as:
  - a. A fixed quantity, expressed in kW or any of its multiples; or
  - b. A pre-defined percentage of the Firm Capacity Certificates associated with a single Physical Asset or group of Physical Assets univocally identified.
- 4.4.3.4 The Firm Capacity Certificates used to back the Capacity transaction shall be either:
  - a. Transferred from the Seller to the Buyer; or
  - b. Changed their status to “Blocked”;

depending on the type of Contract agreed in the transaction and its specific provisions, which shall be verified by the Market Operator.
- 4.4.3.5 The allowed Capacity transactions shall not be conditional to any event or value which are not explicitly stated in this Code.

#### 4.4.4 INFORMATION TO BE PROVIDED FOR CUSTOMIZED CONTRACTS

- 4.4.4.1 Following information shall be provided by the parties during the registration process of a Customized Contract:
  - a. Identification of the buyer and seller;
  - b. Total duration of the Contract;
  - c. Profile of the Energy sold and bought by the parties, at each Energy Trading Period, over the complete duration of the Contract, or formula that clearly establishes the calculation to determine it and the information required to perform such calculations;
  - d. Profile of the Capacity sold and bought by the parties, at each Capacity Trading Period, over the complete duration of the Contract, or formula that clearly establishes the calculation to determine it and the information required to perform such calculations;
  - e. Identification of the Firm Capacity Certificates that the Seller sells to the Buyer to back the Capacity transaction, at each Capacity Trading Period;
  - f. Explicit indication that the bought and sold Capacity shall be considered Guaranteed or Non-Guaranteed;
  - g. A statement indicating if the amounts of Energy bought and sold, as per clause c shall be considered valid for the whole duration of the Contract or they can be periodically adjusted as per the applications of the provisions stated in Sub-section 4.5.6; and

- 4.4.4.2 The Market Operator is entitled to request any other information it deems necessary, at its sole discretion, to assess the appropriateness of the Contract for being registered. This information may include copies of parts, sections or clauses of the signed bilateral contract, provided it does not contain price or other commercially sensitive information.

## 4.5 CONTRACT REGISTRATION

### 4.5.1 THE CONTRACT REGISTER

- 4.5.1.1 The Market Operator shall organize and maintain a register of the Energy and Capacity sold and purchased in Contracts, with the information submitted by Market Participants. The Contract Register will not contain any price or other commercially sensitive information. The purpose of the Contract Register is to:
- a. Determine quantities purchased and sold in the Balancing Mechanisms for Energy and Capacity;
  - b. Keep records of Energy and Capacity contracted quantities to perform the settlement process;
  - c. Verify compliance with the Capacity Obligations.
- 4.5.1.2 The Contract Register shall record for each contract:
- a. Contracting parties, identifying seller and buyer;
  - b. Duration of the Contract;
  - c. Type of Contract (Standardized or Customized)
  - d. For Standardized Contracts:
    - i. The type of Standardized Contract; and
    - ii. The information indicated in Sub-sections 4.3.1, 4.3.2, 4.3.3, or 4.3.4, as it corresponds.
  - a. For Customized Contracts, the information listed in Sub-section 4.4.4.
- 4.5.1.3 The Market Operator shall update the Contract Register when,
- a. A new profile of the Energy bought and sold in a Contract is notified by the involved Market Participants, as per application of Sub-section 4.5.6;
  - b. A modification to a registered contract is notified by the involved Market Participants; or
  - c. a registered Contract ends.

### 4.5.2 APPLICATION FOR CONTRACT REGISTRATION

- 4.5.2.1 Each Market Participant shall request the Market Operator for registration of any new Contract signed.
- 4.5.2.2 The Market Operator shall publish on its web site the form Request for Contract Registration for Market Participants to present the relevant information in notifying a new Contract or changes in a registered contract. This form will request all the necessary information for the Market Operator to carry out its functions.

### 4.5.3 PROCESSING THE CONTRACT REGISTRATION REQUEST

- 4.5.3.1 The two parties in the Contract may present a single notification and request for registration of a new contract, or a modification, as long as the representatives of both parties sign it. In the case both parties sign a single notification, the Market Operator shall consider as if both presented a registration request with the same information.
- 4.5.3.2 Within three [3] Business Days of receiving a request of Contract Registration, The Market Operator shall send a written notification to the Market Participant which issued the request, acknowledging receipt of the Market Participant request.
- 4.5.3.3 If only one party has submitted the request for registration and the request is not signed also by the other party, the Market Operator shall notify the other party requesting confirmation within the next three [3] Business Days. If within this deadline the Market Operator does not receive a response from the other party or the other party informs it disagrees with the submitted information, the Market Operator shall reject the registration and inform the Market Participant that submitted the request, indicating the reasons for rejection.
- 4.5.3.4 The Market Operator will assess if the request for Contract registration is in accordance with this Code and the Contract Market Operational Procedure, performing the checks and verifications it deems appropriate. The Market Operator may request to the parties of the Contract any additional information it considers necessary to comply with its verification obligations.
- 4.5.3.5 If the Market Operator requests additional information or documents pursuant to Clause 4.5.3.4 the parties of the Contract shall provide such additional information, documents, or re-submit a completed Contract Registration request, as the case may be, as soon as is practicable.
- 4.5.3.6 Within ten [10] Business Days in case of a Standardized Contracts, or fifteen [15] Business Days in case of a Customized Contract, after receipt of the request for Contract registration and all additional information requested pursuant Clause 4.5.3.4 above, the Market Operator shall notify the Contract parties whether:
- a. the Request for Contract Registration is not in accordance with any of the requirements established in this Code or the Contract Market Operational Procedure; or
  - b. the Request for Contract Registration is in accordance with the requirements established in this Code and that the Contract is acceptable for being Registered. , The Market Operator shall also notify each party the amount of the Security Cover it shall provide and the approved form in which Security Cover must be furnished to the Market Operator, pursuant the provisions stated in 14 of this Code.
- 4.5.3.7 In cases a Market Participant has not submitted all additional information, documents or new Contract Registration request, as the case may be, pursuant to Clauses 4.5.3.4 and 4.5.3.5 above, or constituted a Security Cover pursuant Clause 4.5.3.6 above, within 3 months of notification by the Market Operator, the request for Contract Registration will automatically lapse, provided that such lapse of the Contract Registration request shall not prevent the parties of the Contract applying again to the Market Operator, and the request for Contract Registration submitted again by the parties shall be treated as a new request for Contract Registration.

- 4.5.3.8 The Market Operator may reject a request for Contract Registration when:
- a. Any of the parties involved in the Contract is not a Market Participant, except in following cases:
    - i. The buyer is a BPC who have signed a Standardized Load Following Supply contract with a Supplier; or
    - ii. An Import Contracts in which the seller is exempted to be registered as Market Participant, as per directions issued by the Authority.
  - b. The request for Contract Registration has been submitted by one party only and the request for confirmation, issued by the Market Operator to the other party, did not receive a positive response from the other party or the other party informs it disagrees with the submitted information;
  - c. The request for Contract Registration by each party contains discrepancies, and/or conflicting information, and the parties have not corrected such deficiencies at a request of the Market Operator, pursuant Clause 4.5.3.4;
  - d. the parties have not supplied all of the information required by the Market Operator pursuant Clause 4.5.3.4 within three (3) months of submission of such request;
  - e. the Contract requested to be registered conflicts with other Contracts, already registered, by one or both of the involved parties;
  - f. It is a Customized Contract, which characteristics are not in accordance with the requirements established in this Code;
  - g. The Contract involves a Capacity transaction and the seller do not own the necessary Firm Capacity Certificates to support the transaction; or
  - h. The Contract does not pass one or more of the verifications and checks established in the Contract Market Operational Procedure.

#### 4.5.4 CONTRACT REGISTRATION

- 4.5.4.1 Upon receipt of the approved form and amount of the Security Cover, the Market Operator shall:
- a. Incorporate the Contract into the Contract Register, within two [2] Business Days;
  - b. Notify both parties that the Contract has been registered, and the date at which such registration took place.
- 4.5.4.2 For settlement purposes, the Contract will become effective:
- a. At the date indicated by the parties which are requiring registration; or
  - b. At 0:00 a.m. of the day following the inclusion of the Contract in the contract Register;

whichever is later.

#### 4.5.5 RIGHTS FOR APPEAL AND RECONSIDERATION

- 4.5.5.1 Any party of the Contract requested to be registered may challenge a decision by the Market Operator to reject its Contract Registration pursuant to Clause 4.5.3.8, and may use the Dispute Resolution procedures set out in 15 of this Code for this purpose.
- 4.5.5.2 In cases any party of the Contract requested to be registered does not agree with the decision finally taken by the application of the Dispute Resolution procedures set out in 15 of this Code, it is entitled to appeal such decision to the Authority.

#### 4.5.6 CHANGES IN THE CONTRACT AND THE CONTRACT REGISTER

- 4.5.6.1 Market Participants are allowed to produce modifications in the Registered Contracts without requiring Contract Un-registration and registration of a new one, provided that such modification involves only the Energy or Capacity quantities registered. The contract type shall remain unchanged.
- 4.5.6.2 The parties on a bilateral contract shall notify the Market Operator, requesting changes in the Registered Contract, using the standardized forms published by the Market Operator in its webpage. This notification shall be issued not later than three days after agreeing such modification between the parties and not later than one week before the date when the Market Operator must initiate the calculations for the Monthly or Yearly Settlement process. The two parties in the Contract may present a single notification, as long as the representatives of both parties sign it.
- 4.5.6.3 Within two [2] Business Days of receiving a request of changes in the Registered Contract the Market Operator shall send a written notification to the Market Participant which issued the request, acknowledging receipt of the request for change.
- 4.5.6.4 The Market Operator will assess if the request for changes in the Registered Contract is in accordance with this Code and the Contract Market Operational Procedure, performing the checks and verifications it deems appropriate.
- 4.5.6.5 The Market Operator may reject a request for changes in the Registered Contract in cases in which:
  - a. Any of the involved Market Participants does not own the necessary Firm Capacity Certificates to support the required change;
  - b. Allowing the change, implies a non-compliance situation with the Capacity Obligations of one or both involved Market Participants;
  - c. The registered Security Cover of one or both involved Market Participants is not sufficient to guarantee the eventual transactions in the BME or BMC, as it corresponds;
  - d. the requested changes in the Registered Contract conflicts with other Contracts, already registered, by one or both of the involved parties.
- 4.5.6.6 In the case the Market Operators accepts the change in the Registered Contract, it shall:
  - a. Produce the requested changes in the Contract Register, also adjusting the Firm Capacity Register if it corresponds;

- b. Immediately inform the Market Participants involved in the request for change about this acceptance; and
- 4.5.6.7 For settlement purposes, the changes in the Registered Contract will become effective:
- a. At the date indicated by the parties which are requiring changes in the Registered Contract; or
  - b. At 0:00 a.m. of the day following the notification issued by the Market Operator pursuant Clause 4.5.6.6;
- whichever is later.

## 4.6 CONTRACTS UNREGISTRATION

### 4.6.1 REASONS FOR UNREGISTERING

- 4.6.1.1 The Market Operator shall eliminate a bilateral contract from the Contract Register in cases in which:
- a. The bilateral contract reaches its Contract Termination Date; or
  - b. Both parties in the bilateral contract agree in the contract termination at any date different to the Contract Termination Date, informing the Market Operator of an Early Contract Termination; or
  - c. One of the parties ceases to be a Market Participant, as per a Termination Order issued by the Market Operator, in accordance with the prescriptions stated in Sub-sections 17.2.3 of this Code; or
  - d. One of the parties is suspended as Market Participant, as per decision of the Market Operator in accordance with the prescriptions stated in Sub-sections 17.2.2 of this Code, in cases the restrictions imposed by the Market Operator on such Market Participant implies that the Registered Contract can't be properly implemented.

### 4.6.2 UNREGISTERING DUE TO REACHING THE CONTRACT TERMINATION DATE

- 4.6.2.1 The Market Operator shall notify to the parties involved in a contract that is soon to terminate, explicitly stating the actions that the Market Operator will take immediately after such date and, if it corresponds, the actions that the involved parties shall take before such Termination Date. This notification shall be given to the parties:
- a. At least six (6) months before the Contract Termination Date, in case one of the parties is a BPC; or
  - b. At least three (3) months before the contract termination date in all other cases.
- 4.6.2.2 In cases in which the bilateral contract registered involves a BPC, regardless such BPC is a Market Participants or not, the Market Operator notification to such BPC shall, at least, contain a request to notify the Market Operator, not later than 60 business days before the contract termination, about its intention of:
- a. Continue or renew, as it corresponds, the existing Contract; in which case the Market Operator shall send the involved BPC a new notification stating that:



- i. A request for a change in the Contract Register shall be received by the Market Operator at least five (5) Business days before the Contract Termination Date, following the procedures established in Section 4.5.6; and
  - ii. In case the request indicated in paragraph a.1 above is not received before the stated date, it will consider that one or both parties have decided not to renew the contract and that, at the Termination Date, a Disconnection Order will be issued to the Transmission or Distribution Network Service Provider to which Transmission Network or Distribution Network the BPC is connected, directing the Disconnection of the relevant Facilities or equipment of the involved BPC.
- b. Sign a new bilateral Contract with a Market Participant other than the Market Participant which contract is soon to terminate; in which case the Market Operator shall send the involved BPC a new notification stating that:
  - i. A new request for Contract Registration shall be received by the Market Operator at least ten (10) Business days before the Contract Termination Date, following the procedures established in Section 4.5; and
  - ii. In case the request indicated in paragraph b.1 above is not received before the stated date, it will consider that the involved BPC has decided not to sign a new contract and/or it is unable to agree it, and that, at the Termination Date, a Disconnection Order will be issued to the Transmission or Distribution Network Service Provider to which Transmission Network or Distribution Network the BPC is connected, directing the Disconnection of the relevant Facilities or equipment of the involved BPC; or
- c. Not to sign a new bilateral contract, start receiving its supply from the Last Resort Supplier at the rates established by the Authority after the Termination Date, in which case the Market Operator shall send the involved BPC a new notification stating that:
  - i. It shall enter into an agreement with the corresponding Last Resort Supplier, for start receiving its supply at regulated tariffs; and
  - ii. A copy of the agreement with the Last Resort Supplier shall be received by the Market Operator at least five (5) Business days before the Contract Termination Date, following the procedures established in Section 4.5; and
  - iii. In case the copy of the agreement stated in paragraph c.2 above is not received before the stated date, it will consider that the involved BPC has decided to cease to receive supply and that, at the Termination Date, a Disconnection Order will be issued to the Transmission or Distribution Network Service Provider to which Transmission Network or Distribution Network the BPC is connected, directing the Disconnection of the relevant Facilities or equipment of the involved BPC;

### 4.6.3 UNREGISTERING DUE TO EARLY CONTRACT TERMINATION

- 4.6.3.1 In case both parties in a bilateral contract have mutually agreed in a contract termination, at an earlier date than the date that was communicated to the Market Operator at Contract Registration (Early Contract Termination), they shall inform the Market Operator about such decision requesting a Contract Un-registration, at least 20 Business Days before the moment at which this Early Contract Termination.
- 4.6.3.2 The Market Operator shall publish on its web site the form Request for Contract Un-registration due to early termination for Market Participants to present the relevant information in notifying an Early Contract Termination. This form shall request the minimum information for the Market Operator to carry out its duties. The request for Contract Un-registration shall be signed by the two parties involved in the bilateral Contract.
- 4.6.3.3 Within three [3] Business Days of receiving a Request of Contract Un-registration, the Market Operator shall send a written notification to the Market Participants which issued the request, acknowledging receipt of the Market Participants request. In case the un-registered contract involves one or more BPCs, the Market Operator shall include in the notification to such BPCs that, unless a new bilateral Contract is registered before at the Contract Un-registration Date, its supply will be transferred to the Last Resort Supplier, as per the prescriptions stated in Clause 4.6.5.1.
- 4.6.3.4 The Market Operator will assess if the request for Contract Un-registration due to Early Contract Termination is in accordance with this Code and the Contract Market Operational Procedure, performing the checks and verifications it deems appropriate. In particular, the Market Operator during the verification process shall assess the consequences arisen from Contract Un-registration as established in Sub-section 4.6.5 to justify its decision.
- 4.6.3.5 Within ten [10] Business Days of receiving the request for Contract Un-registration due to Early Contract Termination, the Market Operator shall notify the Contract parties whether:
- a. the Request for Contract Un-registration is in accordance with the requirements established in this Code and the Contract Market Operational Procedure, without any additional requirement, in which case the bilateral contract will be unregistered at the requested un-registration date; or
  - b. the Request for Contract Un-registration is in accordance with the requirements established in this Code and the Contract Market Operational Procedure, subject to compliance of certain additional requirements, which shall be fulfilled by one or both parties. The notification shall clearly state which is the party required to fulfil these additional requirements and if the un-registration will be performed at the requested date and/or at the date such requirements are properly fulfilled, as indicated in Sub-section 4.6.5 of this Code; or
  - c. the Request for Contract Un-registration is not in accordance with the requirements established in this Code and, therefore, the Contract cannot be un-registered, in which case the Market Operator shall clearly state the reasons for which this Un-registration cannot be granted.
- 4.6.3.6 The Market Operator may reject a request for Contract Un-registration due to Early Contract Termination when:

- a. The request for Contract Un-registration due to Early Contract Termination has been submitted by one party only, without the consent of the other party.
- b. The request for Contract Un-registration contains discrepancies, and/or conflicting information;
- c. the Contract requested to be un-registered conflicts with other Contracts, already registered, by one or both of the involved parties;
- d. The request does not pass one or more of the verifications and checks established in the Contract Market Operational Procedure.

#### 4.6.4 UNREGISTERING DUE TO MARKET PARTICIPANT TERMINATION OR SUSPENSION

- 4.6.4.1 In cases that for whatsoever reason, the Market Operator decides, following the procedures established in Sub-section 17.2.3, issuing a Termination Order to a Market Participant, all the Registered Contracts of such Market Participant shall be Un-registered at the same moment the Market Operator issues the Termination Order.
- 4.6.4.2 In cases that for whatsoever reason, the Market Operator decides, following the procedures established in Sub-section 17.2.2, issuing a Suspension Order to a Market Participant, which contains provision for unregistering one or more bilateral contracts of such Market Participant, the Registered Contracts indicated in such Suspension Order shall be Un-registered at the same moment the Market Operator issues the Suspension Order.
- 4.6.4.3 If it corresponds, within the next three (3) Business Days after the Contract Un-registration referred to in Clauses 4.6.4.1 or 4.6.4.2, the Market Operator shall notify to one or more Market Participants about the eventual additional obligations they have to comply with, which arise due to the un-registration of one or more bilateral contract, with clear indication about the timeframe for such notified Market Participants to comply with such obligations.

#### 4.6.5 ACTIONS TAKEN AFTER CONTRACT UN-REGISTRATION

- 4.6.5.1 In case a bilateral contract is un-registered, for whatsoever reason other than reaching the bilateral Contract Termination Date and, as a consequence of such Contract Un-registration, a BPC, regardless such BPC is a Market Participants or not, ceases to be supplied or it becomes to be only partially supplied, the Market Operator shall:
  - a. For all BPCs which are not Market Participants:
    - i. Inform the BPC about this situation and that, for such reason, its supply has been transferred from the date stated in the notification to the BPC corresponding Last Resort Supplier;
    - ii. Inform the Last Resort Supplier that the Energy taken by the involved BPCs shall be assigned to it; and
    - iii. Inform to the Last Resort Supplier the contact details of all the BPCs which have been assigned to it, requesting that new supply contracts shall be signed with such BPCs.

- b. For all BPCs which are Market Participants:
    - i. Notify the BPC about this situation and that, for such reason, the eventual Imbalances that will appear shall be settled at the BME;
    - ii. If it corresponds, notify the BPC that it has to establish one or more bilateral Contracts with a Market Participant other than the Market Participant which contract has been un-registered to comply with its Capacity Obligations, indicating the allowed timeframe for registration of such new bilateral contracts; and
    - iii. In case the new request for Contract Registration indicated in ii above is not received before the stated date, the Market Operator shall consider it an Event of Default and it shall act in consequence, as per Sub-section 17.2.1.
- 4.6.5.2 The Authority will issue regulations allowing to recover the Energy received by a BPC to which Clause 4.6.5.1 applies, from the date at which the Contract Un-Register took place and the date at which the contract with the Base Supplier is actually established.
- 4.6.5.3 At the same time of Contract Un-registration, the Market Operator shall update the Firm Capacity Register, returning the Firm Capacity Certificates to the Market Participant which owned them before the bilateral Contract which is being Un-registered was registered, taken due consideration about the eventual changes in the Firm Capacity Certificates Status that would be required.
- 4.6.5.4 Immediately after the Firm Capacity Register update, the Market Operator shall verify appropriate compliance with the Capacity Obligations by all Market Participants which had been affected for such update. In case a Market Participant, due to the re-assignment of the Firm Capacity Certificates, is not complying with its Capacity Obligations, the Market Operator will issue a notification to these Market Participants to solve the non-compliance situation by contracting additional Capacity or installing additional Generation, within the timeframe indicated in such notification. The Market Operator is entitled not register any new contract, other than contracts for increasing the credited Capacity of the involved Market Participant or BPC, until the moment the Non-compliance situation is solved.
- 4.6.5.5 While evaluating the Contract Un-registration consequences, the Market Operator shall recalculate the amount of the Security Cover the any of the parties or other Market Participants affected by the Contract Un-registration, should provide. In case this amount is higher than the amount recorded in the Security Cover Register, the Market Operator will notify the involved Market Participant requiring to increase such amount, within the timeframe prescribed in such notification, pursuant the provisions stated in 14 of this Code. The Market Operator is entitled to delay the Contract Un-registration until the amended Security cover is actually registered.
- 4.6.5.6 Regardless of the date a bilateral contract is un-registered, the parties will remain responsible for any outstanding obligation arisen at or before such un-registration date.

## **4.7 LEGACY CONTRACTS**

### **4.7.1 ASSIGNATION OF LEGACY CONTRACTS**

- 4.7.1.1 All the rights and obligations associated with the Legacy Contracts, including the payments to or from the Generators, will be commercially allocated to the Base Suppliers associated with the DISCOs or to K-Electric.
- 4.7.1.2 All the Energy generated by the Generators with Legacy Contracts; the Firm Capacity Certificates associated with the Generator; the Available Capacity of each Generator and any eventual revenue associated with the provisions of Ancillary Services or Must Run Generation will be commercially allocated to the Base Suppliers associated with the DISCOs or to K-Electric.
- 4.7.1.3 The Allocation Factors to distribute rights, obligations, Energy Generated, Firm Capacity Certificates and eventual revenues associated with provision of Ancillary Services from Legacy Contracts among Base Suppliers associated with the DISCOs or K-Electric are established in Table 7 in Clause 19.2.4.1.
- 4.7.1.4 The Authority may, from time to time, instruct the adjustment of the Allocation Factors issuing appropriate directions or regulations.

### **4.7.2 REGISTERING OF COMMERCIALY ALLOCATED LEGACY CONTRACTS**

- 4.7.2.1 At CMOD, the Market Operator shall register all Legacy Contracts in the following way:
  - a. Each Legacy Contract shall be characterized as per the contract types established in Sub-section 4.2.2 and Section 4.3.
  - b. Each Legacy Contract will be registered in the Market Operator as if there were different contracts with each DISCO and K-Electric. Each of these divided contracts will be equal to the original Legacy Contract multiplied by the Allocation Factor.
  - c. The Contract Registered managed by the Market Operator shall be adjusted each time the Authority decides to modify the Allocation Factors.

### **4.7.3 OTHER EXISTING CONTRACTS AT CMOD**

- 4.7.3.1 Market Participants, which have agreed bilateral contracts, other than Legacy Contracts, before CMOD, shall register such contracts with the Market Operator, following the prescriptions established in Section 4.5 of this Commercial Code.
- 4.7.3.2 If required, existing bilateral contracts, other than Legacy Contracts, shall be adjusted or renegotiated, in order to make them compatible with the CTBCM and this Code.

## 5. COMMERCIAL METERING SYSTEM

### 5.1 COMMERCIAL METERING REQUIREMENTS

#### 5.1.1 GENERAL REQUIREMENTS

- 5.1.1.1 All interfaces where commercial transactions take place shall be provided with a Commercial Metering System which complies with the provisions of this Code and the Grid or Distribution Code, as it corresponds.
- 5.1.1.2 Interfaces involved in commercial transactions or at which Energy or Capacity shall be registered for the proper implementation of this Code, collectively named as Metering Points, include, but it is not limited to:
  - a. Interface between a Market Participant and a Transmission Licensee;
  - b. Interface between a Market Participant and a Distribution Licensee; and
  - c. Interface between two different Market Participants;
  - d. Interface between a Transmission Licensee and a Distribution Licensee
  - e. Interface between two different Transmission Licensees;
  - f. Interface between two different Distribution Licensees;
  - g. Interface between a Transmission Licensee or Distribution Licensee, as it corresponds, and authorized institutions from other countries, involved in international power trade;
  - h. Interface between a Transmission Licensee or Distribution Licensee, as it corresponds, and companies or institutions located in Azad Jammu & Kashmir, Gilgit Baltistan and territories where the applicability of the Act is not extended;
  - i. Interfaces between a Distribution Licensee and Embedded Generation, if the Energy purchased by the involved Base Supplier is considered to be procured on behalf of more than one Base Suppliers

#### 5.1.2 RESPONSIBILITIES OF METERING SERVICE PROVIDERS

- 5.1.2.1 The responsibility for performing the meter read at each Metering Point, perform appropriate validity checks and transfer the information to the Market Operator will be assigned to an authorised Metering Service Providers. Each Metering Point shall be assigned to one, and only one, Metering Service Provider.
- 5.1.2.2 Metering Service Providers shall be registered with the Market Operator.
- 5.1.2.3 An authorised Metering Service Provider shall:
  - a. Create, maintain and ensures appropriate functioning of a central register of all the Metering Points for which it is responsible to read;
  - b. Ensure timely execution of verification, calibration, and technical inspection of the Commercial Metering System;
  - c. Collect metering results from all the meters installed at the Metering Points for which it is responsible to meter.

- d. Perform the central aggregation of commercial metering data determining their suitability to be used in the settlements performed by the Market Operator;
- e. Establish procedures for restoration and validation and/or replacement of the metering data, as defined in the Grid Code;
- f. In agreement with the involved Market Participants, organize communication channels when it is necessary to provide the remote reading of the metering data;
- g. Submit the aggregated and validated commercial metering data to the Market Operator, in accordance with this Code;
- h. Create, maintain and ensure appropriate functioning of the electronic database of the metering data;
- i. Ensure the storage and archiving of the metering data and the data on technical condition of the Commercial Metering System, in appropriate electronic databases.

### 5.1.3 AUTHORIZATION OF METERING SERVICE PROVIDERS

- 5.1.3.1 To perform the functions of Metering Service Provider, the interested company should obtain and periodically confirm the proper authorization. The authorization of a Metering Service Provider shall be carried out by the Authority, which should confirm their competences to perform the obligations stated in Article 5.1.2.3.
- 5.1.3.2 The Authority will establish the procedures and criteria for the authorizations of Metering Service Providers.
- 5.1.3.3 For obtaining the required authorization a person intending to become Metering Service Provider shall approach the Authority with the corresponding application and provide a full set of documents required by the corresponding procedures to be established by the Authority.
- 5.1.3.4 The Authority will examine the documentation provided and it will decide on its authorization. In case of positive decision, the Authority must issue a certificate with the corresponding authorization.
- 5.1.3.5 The validity of the authorization of the Metering Service Provider will be established in accordance with the procedures and regulations established by the Authority.
- 5.1.3.6 The Authority shall establish the criteria to be used to assign a Metering Point to a particular Metering Service Provider.

## 5.2 METER READING AND DATA COLLECTION

### 5.2.1 GENERAL

- 5.2.1.1 All Capacity and Energy used for market settlement shall be measured through the Commercial Metering System, operated by the Metering Service Provider.
- 5.2.1.2 Collection of metering data for the existing Metering Points shall be done by the Metering Service Provider:

- a. On daily basis, through the Secure Metering System (SMS) if the Metering Point is located at the Transmission level;
  - b. On daily basis, through the SMS, if the Metering Point is located at a Distribution Level and it has been included in the SMS operated by the Metering Service Provider; or
  - c. On a weekly basis by the Metering Service Provider, on the first business day of each week for the values corresponding to the preceding week, if the Metering Point does not have the necessary characteristics as to be incorporated into the SMS system.
- 5.2.1.3 NTDC, as the MSP initially appointed as per clause 19.2.1.1, shall develop, and present to the Market Operator for approval, the Standard Operating Procedures for Meter Reading and Data Collection, in accordance with the Grid Code and this Code.
- 5.2.1.4 The Metering Service Provider shall provide to the Market Operator the information of installed metering systems, commissioning and testing.

## 5.2.2 READING AND COLLECTION THROUGH THE SECURE METERING SYSTEM

- 5.2.2.1 The Metering Service Provider shall implement a Secure Metering System, to collect and process all the commercial metering data from Metering Points, for which it is responsible to meter and to transfer the metring information to the Market Operator, electronically.
- 5.2.2.2 The Metering Service Provider shall perform Automatic Meter Reading of the values registered at all the Metering Points integrated into its Secure Metering System, every day, between 00:00:00 and 23:59:59 on the following day (D+1).
- 5.2.2.3 The Secure Metering System shall collect information of all Meters associated at a Metering Point, including the Main Meter, Back Up Meter and Verification Meters, as it corresponds pursuant the requirements established in the Grid Code.
- 5.2.2.4 The information collected by the Secure Metering System for each Meter associated with a Metering Point shall include at least:
- a. Half-hourly readings of active and reactive Energy, if it corresponds, with their associated time stamps;
  - b. Accumulated readings of active and reactive Energy, if it corresponds, for the previous day;
  - c. Alarms and event logs produced by the Meter;
  - d. Qualificators of the meter readings (accuracy qualificators) if the Meter produces such kind of information.
  - e. time and date stamps.
- 5.2.2.5 According with the results of the analysis of the completeness and reliability of the metered data, the Metering Service Provider shall decide about the appropriateness of the values read. Additionally, the Metering Service Provider shall mark the obtained data as “complete and accurate”, “incomplete but accurate”, “inaccurate” or “no data”.



### 5.2.3 MANUAL READING

- 5.2.3.1 The Metering Service Provider shall establish a schedule for Local Meter Reading from all Metering Points which are not equipped with hardware or software for remote reading and collection of metering data through the Secure Metering System.
- 5.2.3.2 The Metering Service Provider shall submit to the Market Operator the schedule and time for Meter readings.
- 5.2.3.3 During each visit to the premises where the Commercial Metering System is located, in order to perform Local Meter Reading, the Metering Service Provider shall perform an inspection of the facilities. In case the Metering Service Provider detects any anomaly, including maintenance defects, inappropriate equipment, or evidence or suspicions of tampering, it shall prepare a Metering Incident Report, informing this situation to the Market Operator.
- 5.2.3.4 The information collected by the Metering Service Provider for each Meter associated with a Metering Point shall be determined by the Metering Service Provider, but it shall include at least:
  - a. Half-Hourly readings of active and reactive Energy, if it corresponds, with their associated time stamps in all cases the Meter installed at the Metering Point provides for such capability;
  - b. Accumulated readings of active and reactive Energy, if it corresponds, for the previous month;
  - c. time and date stamps;
  - d. Alarms and event logs produced by the Meter;
  - e. Qualificators of the meter readings (accuracy qualificators) if the Meter produces such kind of information.
- 5.2.3.5 In case of successful reading of a Local Meter Reading, the Metering Service Provider shall analyse the completeness and reliability of the data read. In particular:
  - a. Absence of alarm signals from the Meter during previous period;
  - b. Adequacy of time and date stamps;
  - c. Completeness of hourly readings for the Meters and validation;
  - d. The contents of the event log of the Meter during the previous period;
  - e. The adequacy of the parameters programmed in the Meter and Metering Equipment.
- 5.2.3.6 According with the results of the analysis of the completeness and reliability of the metered data, the Metering Service Provider shall decide about the correctness of the read. Additionally, the Metering Service Provider shall mark the obtained data as “complete and accurate”, “incomplete but accurate” or “inaccurate”, as it corresponds.

## 5.2.4 ACTION AT THE IMPOSSIBILITY OF OBTAINING DATA

- 5.2.4.1 When it is impossible to obtain the complete metering data from the Metering Point, the Metering Service Provider must promptly take all possible steps to obtain these data, in particular to identify and, if possible, remove the cause of the absence of data and get the information in fixed terms and in full volume.
- 5.2.4.2 In the event of failure of the data collection and transmission equipment or the communication channels the Metering Service Provider shall intend Electronic or Manual Local Meter Reading. In cases this action is successfully performed, the information shall be labelled as “complete and accurate” or “incomplete but accurate”, as it corresponds.
- 5.2.4.3 In case of failure of the Main Meter, Back-Up Meter or Verification Meter, the Metering Service Provider should retrieve all the data from the other meters, labelling it as it corresponds. The data of the failure meter shall be labelled as “no data”.

## 5.3 METER READING VERIFICATIONS

### 5.3.1 VERIFICATIONS PERFORMED BY THE METERING SERVICE PROVIDER

- 5.3.1.1 Verification of the adequacy of the meter readings is a responsibility of the Metering Service Provider. The Metering Service Provider shall process and validate the metered data at each Metering Point, in order to:
  - a. Adjust the metered values by the Metering Equipment, in order to refer such values to the Metering Point, in those cases in which the Commercial Metering System is not installed at the Metering Point. NTDC, as the MSP initially appointed as per clause 19.2.1.1, shall develop procedures and formulas to bring the metered values at points different than the Metering Point into the corresponding values at the Metering Point. These procedures and formulas shall be approved by the Market Operator.
  - b. Perform validity checks to determine the adequacy of the collected metered values. Validation of metering data by the Metering Service Provider shall be performed through a series of Validation Checks which aim is to determine the coherence and plausibility of each metered value or group of metered values. Validation checks shall be performed for all metered values, regardless the way they have been obtained: Automatic Meter Reading, Electronic Local Meter Reading or Manual Local Meter Reading. NTDC, as the MSP initially appointed as per clause 19.2.1.1, shall develop, and submit to the Market Operator for approval, an Operational Procedure which clearly states the minimum set of validation checks that shall be performed.
- 5.3.1.2 As a result of the verification and validation process each metered value should be classified as Valid or Invalid.
  - a. Valid metered value: It is the value, or group of values, which pass all the validations checks. A valid metered value, eventually, may cease to be valid as a result of the analysis and evaluation of an incident, by having additional information about the Metering Point or due to verifications or validations processes performed, at a later date.

- b. Invalid metered value: It is a value, or group of values, which does not pass one or more of the validation checks. An invalid metered value or group of metered values, eventually, may cease to be invalid as a result of further analysis performed by the Metering Service Provider.

5.3.1.3 NTDC, as the MSP initially appointed as per clause 19.2.1.1, shall develop, and submit to the Market Operator for approval, an Operational Procedure detailing the verification and tests to classify a metered value as Valid or Invalid.

### 5.3.2 ACTIONS TO BE TAKEN AFTER INVALIDATION OF DATA

5.3.2.1 When any metered value (or group of metered values) are considered to be “Invalid”, the Metering Service Provider shall perform new readings of the Metering Point involved, which may involve Local Meter Readings.

5.3.2.2 In case this new reading confirms the inadequacy of the data originally gathered or the new data gathered still does not pass the validation checks, the Metering Service Provider shall open a Metering Incident Report and it will proceed to test the Commercial Metering System of the involved Metering Point.

### 5.3.3 DATA VERIFICATION BY THE MARKET OPERATOR AND SUBSTITUTION

5.3.3.1 The Market Operator may perform additional validation or plausibility checks on the metering information provided the Metering Service Provider before using it for settlement purposes.

5.3.3.2 If during the validation process, a metering problem or a failure is identified in a Main Meter, the Market Operator shall use, for settlement purposes the following:

- a. If the Metering Point has a Back-up Meter, the data metered by the Back-up meter shall be used; and
- b. If the Metering Point does not have Back-up Meter, the Energy calculated with the hourly reading by the System Operator shall be used. In this regard, the Market Operator shall require the System Operator to provide the necessary information.
- c. If the Metering Point does not have back-up meter and no information is available from the System Operator, estimation of suitable metering values,

5.3.3.3 Substitution of the commercial electricity metering data, collected and processed by the Metering Service Provider and submitted to the Market Operator, shall only be performed by the Market Operator in the following cases:

- a. When a metered value, or group of metered values, have been labelled as “Invalid” by the Metering Service Provider, and it was not possible, before the Preliminary Settlement Statement due date, as indicated in 0, to obtain metered values which pass all the validation checks (temporarily substitution);
- b. When a metered value, or group of metered values, have been labelled as “Invalid” by the Metering Service Provider, and it was not possible, before the Final Settlement Statement due date, as indicated in 0, to obtain metered values which pass all the validation checks (final substitution);
- c. When the resolution of a Metering Incident Report indicates a fault in one or more equipment associated with the Commercial Metering System and it was

not possible to retrieve accurate data before proceeding to its replacement or repair; and

- d. When there is no-data associated with a Metering Point due to the impossibility to access to the premises where the Commercial Metering System is actually installed or, while accessing to these premises, it was impossible to retrieve the data from the Commercial Metering System.

5.3.3.4 The Market Operator shall inform, in the Settlement Documents, of any problems, errors or failures detected and the replacement data used to calculate the Energy for the Settlement Statement.

5.3.3.5 The Market Operator shall inform the Metering Service Provider about this situation in order to take the appropriate corrective actions.

#### **5.4 STORAGE AND CUSTODY OF COMMERCIAL METERING DATA**

5.4.1.1 The Metering Service Provider shall store commercial metering data for the time necessary to resolve disputes that have arisen between the Market Participants. This period should not be lower than 5 years.

5.4.1.2 When storing the commercial metering data, the following aspects shall be taken into consideration:

- a. Completeness of stored data. Commercial metering stored data should contain all significant information, which is needed to restore the primary metering results, from which these data were formed.
- b. Protection of data against accidental and unintentional changes. Commercial metering stored data should be protected against accidental and intentional or unintentional changes.
- c. Confidentiality of keys. Digital signature keys shall be kept secret and be protected against being compromised by the software tools.
- d. Capacity of commercial electricity metering data storage device. Storage device for commercial electricity metering data should have Capacity enough to perform its functions.

#### **5.5 COMMERCIAL METERING REPORT**

5.5.1.1 Every year Metering Service Provider shall prepare and submit to the Market Operator and the Authority a Commercial Metering Report clearly indicating the interfaces which are in non-compliance with the prescriptions of this Code or the Grid Code and describing the problems in the implementation and application of this Commercial Code or the Grid Code in relation with metering.

5.5.1.2 The Market Participants involved shall collaborate with the Metering Service Provider in the preparation of the Commercial Metering Report, providing timely and accurate information in relation with the Metering Points which are under their jurisdiction.

5.5.1.3 The Commercial Metering Report will include:

- a. List of all interfaces which are in non-compliance with the prescriptions of this Commercial Code or the Grid Code or the Distribution Code, as it corresponds, with clear indications about the plans or actions tending to eliminate such non-compliances;
- b. Problems identified in the implementation of the prescriptions of this Code, the Grid Code or the Distribution Code, as it corresponds, and the corresponding CCOP;
- c. Conflicts of interpretation among the Market Operator, the Metering Service Provider or Market Participants;
- d. Compilation of all proposals for amendment and/or additions to this Code, the Grid Code or the Distribution Code in relation with metering;
- e. Any other relevant matter to identify any problems in the performance, feasibility, efficiency and design of the Commercial Metering System.

## 6. BALANCING MECHANISM FOR ENERGY

### 6.1 BALANCING MECHANISM

#### 6.1.1 BALANCING PERIODS

- 6.1.1.1 The Balancing Mechanism for Energy will determine, for each Market Participant, the Energy Imbalances as the differences between the Energy actually injected / extracted to/from the Transmission or Distribution Network, as it corresponds, and the contracted values, registered in the Contracts Register of the Market Operator.
- 6.1.1.2 The Market Operator shall calculate the Imbalances of Energy on hourly basis (the Energy Balancing Period) and the results will be consolidated on monthly basis for settlement purposes (the Settlement Period).

#### 6.1.2 INFORMATION REQUIRED

- 6.1.2.1 For executing the Balancing Mechanism for Energy, at each month, the Market Operator will use following information:
  - a. Information from the Commercial Metering System, at each interface established in Clauses 5.1.1.1 and 5.1.1.2 for each Market Participant, provided by the Metering Service Provider;
  - b. Information from the Contracts of each Market Participant information, stored in the Contracts Register administered by the Market Operator; and
  - c. System Marginal Prices, determined by the System Operator for of each hour of the month.
- 6.1.2.2 The Market Operator shall collect, properly organize, maintain and custody all the information used for the calculation of the results of the Balancing Mechanism for Energy. This information shall be kept for at least five [5] calendar years or any other larger period as prescribed by Applicable Law, for auditing purposes.

### 6.2 CONSIDERATION OF DISTRIBUTION LOSSES

- 6.2.1.1 For Energy Balancing purposes it is considered that all transactions take place at the Transmission Network. Therefore, if there are Trading Points located in the Distribution Network it is necessary to adjust the metered values to take into account the losses in such network.
- 6.2.1.2 This adjustment shall be performed at all Trading Points, located in the Distribution Network, in which Energy is extracted from the network. That is:
  - a. BPCs;
  - b. Distribution Networks connected to other Distribution Network; and
  - c. Export points located in the Distribution Network.
- 6.2.1.3 The adjustment indicated in 6.2.1.2 shall be calculated as:

- $Adj\_E_{i,h} = E_{MP_{i,d,h}} / (1 - DistLoss_{d,p})$  In cases in which the Trading Point is located in the Distribution Network and the Energy is flowing outside such network.
- $Adj\_E_{i,d,h} = E_{MP_{i,d,h}}$  In all other cases

Where:

- $Adj\_E_{i,h}$  is the Energy at the Trading Point “i”, at hour “h”, adjusted to take into account losses in the Distribution Network, which will be utilized for Energy balancing purposes.
- $E_{MP_{i,d,h}}$  is the value of Energy registered by the Commercial Metering System at the Trading Point “i”, located in the Distribution Network “d” at hour “h”.
- $DistLoss_{d,p}$  is a standard distribution losses coefficient, corresponding to the Distribution Licensee “d” for the period “p” at which the hour “h” belongs, as determined by the Authority, as per the latest Tariff Determination for the involved Distribution Licensee.

## 6.3 CONSIDERATION OF THE TRANSMISSION LOSSES

### 6.3.1 CALCULATION OF THE TRANSMISSION LOSSES

6.3.1.1 The Market Operator will determine, on hourly basis, the losses in the Transmission Network utilizing for such purpose the metering information submitted by the Metering Service Provider.

6.3.1.2 Hourly Transmission losses will be calculated as the difference between total Energy injected into and extracted from the Transmission Network. The calculation shall be performed for each Transmission Licensee individually.

6.3.1.3 The Transmission losses of the Transmission Licensee “k” in hour “h” shall be calculated as:

$$TransLoss_{k,h}[MWh] = \sum_{\forall i \in MP_k} E_{MP_{i,k,h}}$$

Where:

- $TransLoss_{k,h}$  are the Transmission losses of the Transmission Licensee k in the hour h, expressed in MWh
  - $E_{MP_{i,k,h}}$  is the Energy registered by the Commercial Metering System at the Metering Point i, corresponding to the Transmission Service Provider k in the hour h.
  - $\forall i \in MP_k$  means all those Metering Points corresponding to the Commercial Boundaries of the Transmission Licensee k
- 6.3.1.4 Sign convention: For the application of the formula indicated in Clause 6.3.1.3, the Energy registered at each Metering point at each particular hour shall be considered positive if it is flowing into the Transmission Network of Transmission Licensee “k” and negative if it is flowing out from such Transmission Network.

## 6.3.2 CALCULATION OF TOTAL DEMAND

6.3.2.1 The Market Operator will determine, on hourly basis, the Total Demand, for settlement of the Balancing Mechanism for Energy, by adding the total Energy extracted from the Transmission Network and the total Generation connected at distribution level. This calculation shall be performed considering all Transmission Licensees jointly.

6.3.2.2 For such purpose, the Market Operator shall utilize the metering information submitted by the Metering Service Provider

6.3.2.3 Total Demand, for the whole system, in hour “h” shall be calculated as:

$$TotDem_h[MWh] = \left( - \sum_{\forall i \in MP_{T \rightarrow D(-)}} E_{MPi,h} \right) + \sum_{\forall j \in MP_{G \rightarrow D(+)}} E_{MPj,h}$$

Where:

- $TotDem_h$  is the total Energy demanded by Market Participants, which shall be liable to cover the Transmission losses.
- $E_{MPi,h}$  is the Energy extracted (negative) from the Transmission Network, at the boundary point  $i$  in the hour  $h$ .
- $E_{MPj,h}$  is the Energy injected (positive) into the Distribution Network by Embedded Generation, at the boundary point  $j$  in the hour  $h$ .
- $\forall i \in MP_{T \rightarrow D(-)}$  means all those boundary points between a Transmission Network and
  - a Distribution Network; or
  - a BPC; or
  - an Export point; or
  - A Generation Plant which is receiving Back-feed Energy.in which the Energy is flowing outside the Transmission Network (negative value according with the sign convention indicated in 6.3.1.4), during hour  $h$ .
- $\forall i \in MP_{G \rightarrow D(+)}$  means all those boundary points between the Distribution Network and Embedded Generation or Imports which is injecting Energy during the hour  $h$ .

## 6.3.3 UPLIFT OF METERED ENERGY VALUES

6.3.3.1 For balancing purposes, the values registered by the Commercial Metering System of

- a. all Market Participants which supply to Consumers; and
- b. BPCs which are registered as Market Participants,
- c. Generators back-feed Energy, in case this Energy is not contracted with any Supplier,
- d. will be increased, through an Uplift Coefficient, to take into consideration the losses in the Transmission Network.



6.3.3.2 The Uplift Coefficient, to be applied to every Market Participant representing demand shall be calculated as:

$$Uplift_{TransLoss,h} = \frac{\sum_k TransLoss_{k,h}[MWh]}{TotDem_h[MWh]}$$

Where:

- $S_k$  means the addition over all Transmission Licensees
- All other terms are the same previously defined.

6.3.3.3 The values to be used for the Energy Balancing Mechanism shall, be

$$Act_{E_{i,h}} = Adj_{E_{i,h}} * (1 + Uplift_{TrasnLoss,h})$$

In the cases in which the Energy, at the Trading Point, is flowing out of the Transmission or Distribution Network, as it corresponds

$$Act_{E_{i,h}} = Adj_{E_{i,h}}$$

In all other cases

## 6.4 DETERMINATION OF THE IMBALANCE AMOUNTS

### 6.4.1 ASSIGN OF METERED VALUES TO MARKET PARTICIPANTS

6.4.1.1 The Market Operator shall calculate the Energy actually interchanged by each Market Participant at each Balancing Period (one hour) using the values registered in the Commercial Metering System database, adjusted for taking into consideration the losses in the Transmission and Distribution Networks.

6.4.1.2 The Market Operator will determine the Energy actually interchanged by each Market Participant at each hour as:

$$EI_{mp,h} = \sum_{\forall i \in MP_{mp}} Act_{E_{i,h}}$$

Where:

- $EI_{mp,h}$  is the Energy actually interchanged by the Market Participant  $m$  during hour  $h$
- $Act_{E_{i,h}}$  is the Energy interchanged at the Trading Point  $i$ , adjusted for losses as indicated in clause 6.3.3.3.
- $\forall i \in MP_{mp}$  means all those Trading Points which are boundaries for the Market Participant  $mp$ .

6.4.1.3 Sign convention: For the application of the formula indicated in Clause 6.4.1.2, the Energy registered at each Trading Point which is a boundary a Market Participant shall be considered positive if the Energy is flowing the Market Participant boundary into the Transmission Network or Distribution Network, as it corresponds, and negative if it is flowing out from such network.

### 6.4.2 DETERMINATION OF MARKET PARTICIPANTS' CONTRACTED QUANTITIES

6.4.2.1 The Market Operator shall calculate the energy bought and sold through Contracts by each Market Participant at each Balancing Period (one hour) using the information contained in the Contracts Register database.

6.4.2.2 The Market Operator will determine the Energy bought and sold through Contracts by each Market Participant at each hour as:

$$ET_{mp,h} = \sum_{\forall k \in C_{mp}} ETC_{mp,k,h}$$

Where:

- $ET_{mp,h}$  is the Energy bought and sold through Contracts by the Market Participant  $m$  during hour  $h$
- $ETC_{mp,k,h}$  is the Energy purchased or sold by the Market Participant  $mp$ , in the Contract  $k$  in the Balancing Period (hour)  $h$ .
- $\forall k \in C_{mp}$  means the subset of the Contracts in which the Market Participant  $mp$  is a party.

6.4.2.3 Sign convention: For the application of the formula indicated in Clause 6.4.2.2, the Energy bought and sold in each Contract registered with the Market Operator shall be considered positive if corresponding Market Participant is the Seller of such Energy and negative if the corresponding Market Participant is a Buyer.

#### 6.4.3 DETERMINATION OF MARKET PARTICIPANTS' ENERGY IMBALANCES

6.4.3.1 Sign convention (1): A positive imbalance indicates that the corresponding Market Participant has either:

6.4.3.2 The Market Operator shall determine the Energy net imbalance of each Market Participant at each hour as the difference between the Energy actually interchanged by the Market Participant and the Energy bought and sold through the Contracts registered with the Market Operator. Mathematically:

$$Imb\_E_{mp,h} = EI_{mp,h} - ET_{mp,h}$$

Where:

- $Imb\_E_{mp,h}$  is the Energy imbalance of Market Participant  $mp$  during hour  $h$
- $EI_{mp,h}$  is the Energy actually interchanged by the Market Participant  $mp$  during hour  $h$ , calculated as indicated in Clause 6.4.1.2.
- $ET_{mp,h}$  is the Energy bought and sold through Contracts by the Market Participant  $mp$  during hour  $h$ , calculated as indicated in Clause 6.4.2.2.

6.4.3.3 Sign convention (1): A positive imbalance indicates that the corresponding Market Participant has either:

- a. Injected into the Transmission or Distribution Network, as it corresponds, an Energy quantity larger than the contracted one; or
- b. Draw from the Transmission or Distribution Network, as it corresponds, an Energy quantity smaller than the contracted one.

6.4.3.4 Sign convention (2): A negative imbalance indicates that the corresponding Market Participant has either:

- a. Injected into the Transmission or Distribution Network, as it corresponds, an Energy quantity smaller than the contracted one; or

- b. Draw from the Transmission or Distribution Network, as it corresponds, an Energy quantity larger than the contracted one.

## 6.5 DETERMINATION OF THE APPLICABLE MARGINAL PRICE

- 6.5.1.1 The System Operator shall determine, on daily basis and for each hour of the day, the System Marginal Price.
- 6.5.1.2 The System Marginal Price is the variable cost of the unit which supplies a marginal increase in the system demand.
- 6.5.1.3 Within six [6] month from the issuing of this Code, the System Operator will develop, and submit to the Authority for approval, a Commercial Code Operational Procedure for determining the hourly System Marginal Price. Until such moment, the procedure included in Annex I will be used.
- 6.5.1.4 The System Operator shall communicate, on daily basis, the System Marginal Prices to the Market Operator. Market and System Operator shall agree on the channels and formats for the submission of this information.

## 6.6 DETERMINATION OF THE RECEIVABLE AND PAYABLE AMOUNTS

### 6.6.1 CALCULATION OF RECEIVABLE / PAYABLE AMOUNTS

- 6.6.1.1 Within five [5] working days immediately after the end of each month, the Market Operator shall determine the Amounts Payable and Amounts Receivable of each Market Participant, resultant from the Balancing Mechanism for Energy.
- 6.6.1.2 The Market Operator will calculate such amounts as:

$$Bal\_Am_{mp,M}[PKR] = \sum_{h=1}^{Tot\_h} (Imb\_E_{mp,h}[MWh] * Marg_h[PKR/MWh])$$

Where:

- $Bal\_Am_{mp,M}$  is the final balance amount of Market Participant  $mp$  for the settlement month  $M$ , for its participation in the Balancing Mechanism for Energy
  - $Imb\_E_{mp,h}$  is the Energy imbalance of Market Participant  $mp$  during hour  $h$  calculated as indicated in Clause 6.4.3.2
  - $Marg_h$  is the System Marginal Price for the hour  $h$ , determined by the System Operator as per Section 6.5 of this Code, expressed in PKR/MWh.
  - $Tot\_h$  is the total number of hours of month  $M$ .
- 6.6.1.3 A positive balance amount implies an Amount Receivable, and the Market Participant is entitled to receive a payment for such amount. A negative balance implies that the Market Participant is liable for making a payment for such amount.

### 6.6.2 PUBLICATIONS OF BME RESULTS

- 6.6.2.1 The Market Operator shall document and publish, in its website, the results of the BME calculations, on a monthly basis.

- 6.6.2.2 The information the Market Operator shall make publicly available in its web page, includes:
- a. The System Marginal Prices, for each hour of the previous month;
  - b. The amounts payable and receivable of each Market Participant; and
  - c. Any comment or remark the Market Operator deems suitable for proper understanding of the published results.
- 6.6.2.3 Following information shall be make available to each involved Market Participant;
- a. The hourly Metering Information that was used for determining the Energy Imbalances of such Market Participant;
  - b. The hourly values of the Energy actually injected to or extracted from the Transmission or Distribution network by the Market Participant;
  - c. The hourly values of the contracted interchanges of such Market Participant, which were used in the imbalance calculations; and
  - d. The hourly Imbalances of the Market Participant.

## 7. ADDITIONAL MARKET CHARGES

### 7.1 MUST RUN GENERATION

#### 7.1.1 CONGESTED AREAS

- 7.1.1.1 An area shall be considered a Congested Area when the network elements, lines and transformers, which connects such area with the rest of the Transmission Network of Pakistan, are not capable of transporting the Energy that would have circulated through these without overloading, had the least-cost dispatch been implemented.
- 7.1.1.2 The System Operator shall alleviate Congestion in a Congested Area either by:
- a. Dispatching Must Run Generation, if the Congested Area is importing Energy from the rest of the Pakistani system; or
  - b. Instructing Must Stop Generation to one or more Generation Units of the Congested Area, if the Congested Area is exporting Energy to the rest of the Pakistani system.
- 7.1.1.3 A Congested Area shall be considered severely Congested in following cases:
- a. The area exhibits Congestion in more than twenty percent [20%] of the Balancing Periods; and/or
  - b. The cost of the Dispatch that shall be implemented to alleviate Congestion in the Congested Area exceeds five percent [5%] of the cost of the dispatch that would have occurred if such area had not been Congested.
- 7.1.1.4 In the case the System Operator considers that a Congested Area will be catalogued as severely Congested Area for more than three [3] consecutive years, it shall notify the Authority, requesting it to declare such area as a Permanently Congested Area.
- 7.1.1.5 In the case the Authority accept the request issued by the System Operator, it shall notify such acceptance to the Market Operator. The Market Operator shall consider the area as a Permanently Congested Area for settlement purposes, since 0:00 a.m. of the first day of the first month immediately after receiving the notification.
- 7.1.1.6 A Permanent Congested Area will continue in such situation until the expansion of the Transmission Network or the installation of new control or protection devices, shows that Congestion in Permanently Congested Area is eliminated or significantly reduced. The System Operator shall notify the Authority about such situation, requesting such area no longer be considered a Permanently Congested Area.

#### 7.1.2 IDENTIFICATION OF MUST RUN GENERATION

- 7.1.2.1 The System Operator shall univocally identify, at each Dispatch Period, the Generation Units which shall be dispatched to alleviate a Congestion (Must Run Generation) and/or the Generations Units which have to reduce generation or be disconnected to alleviate Congestion (Must Stop Generation).

7.1.2.2 The System Operator shall notify to the Market Operator all Generation Units which shall be considered Must Run or Must Stop Generation, in each Balancing Period.

### 7.1.3 COMPENSATION AMOUNTS FOR MUST RUN GENERATION

7.1.3.1 The Market Operator shall calculate the Energy generated by a Generation Unit, which has been identified as Must Run Generation, at each Balancing Period (one hour), using the following information:

- a. Information provided by the System Operator:
  - i. List of Generation Units entitled to receive compensation for Must Run Generation;
  - ii. If it corresponds, Energy that the Generation Unit would have produced if no instruction to increase Generation had been issued by the System Operator, in cases this value is different from zero.
- b. Information from the Commercial Metering System:
  - i. Energy actually injected into the grid by the Generation Unit entitled to receive compensation, at the corresponding Balancing Period.

7.1.3.2 The amount of Energy which shall be compensated for Generation Units identified as Must Run Generation as:

$$UPC_{MR_{j,h}}[MWh] = EAG_{j,h}[MWh]$$

Where:

$UPC_{MR_{j,h}}$  is the amount of Energy to be compensated for Generation Unit  $j$ , identified as Must Run Generation, in hour  $h$ , in MWh.

$EAG_{j,h}$  is the Energy injected into the grid by the Generation Unit “ $j$ ”, in hour “ $h$ ”, in MWh, obtained through the Commercial Metering System.

7.1.3.3 The economic compensations to be allocated to a Generator for the Generation Units which were considered as Must Run Generation, at each Energy Balancing Period, shall be calculated by the Market Operator as:

$$MRC_{k,h}[PKR] = \sum_{j \in k} [UPC_{MR_{j,h}}[MWh] * (VC_i - Marg_h[PKR/MWh])]$$

Where:

$MRC_{k,h}$  is the hourly amount to be compensated to Generator “ $k$ ” for Must Run Generation during hour “ $h$ ”, in PKR;

$UPC_{MR_{j,h}}$  is the amount of Energy to be compensated for Generation Unit “ $j$ ”, considered Must Run Generation, in hour  $h$ , in MWh, calculated pursuant Clause 7.1.3.2;

$Marg_h$  is the System Marginal Price of hour “ $h$ ”, determined by the System Operator pursuant Section 6.5;

$VC_{i,hi}$  is the Variable Generation Cost of Generation Unit “ $j$ ” at hour “ $h$ ”, registered by the Market Operator;

- 7.1.3.4 The Market Operator shall determine the monthly total economic compensations for Must Run Generation, as the sum, over all the hours of the Settlement Period of the hourly compensation calculated in 7.1.3.3. The monthly total economic compensations of a Generation Unit for Must Run Generation shall be calculated as:

$$MMRC_{k,m} = \sum_{h=1}^T MRC_{k,h}[PKR]$$

Where:

$MMRC_{k,m}$  is the amount to be compensated to Generator “k” for Must Run Generation, during the Settlement Period “m”, in PKR;

$MRC_{k,h}$  is the hourly amount to be compensated to Generator “k” for Must Run Generation, during hour “h”, in PKR;

$T$  is the total number of hours in the Settlement Period.

## 7.1.4 COMPENSATION AMOUNTS FOR MUST STOP GENERATION

- 7.1.4.1 Must Stop Generation is not entitled to receive compensation for being instructed to disconnect from the Transmission or Distribution Network or to reduce the Energy produced below the maximum Available Capacity.

## 7.2 ANCILLARY SERVICES

### 7.2.1 REQUIREMENTS AND OBTAINING OF ANCILLARY SERVICES

- 7.2.1.1 The definitions, types and minimum requirements of Ancillary Services, which are scheduled by the System Operator are established in the Grid Code.
- 7.2.1.2 For the purpose of this Code, the Ancillary Services considered are:
- Frequency Containment Reserve;
  - Frequency Restoration Reserve;
  - Frequency Replacement Reserve;
  - Reactive Power and Voltage Control; and
  - Black Start Capability.
- 7.2.1.3 The System Operator shall determine and schedule the required Ancillary Services while performing the Security Constrained Economic Dispatch, either the Day Ahead Schedule or the Real Time Schedule. In this regard the activities of obtaining the necessary Ancillary Services and carrying out the Security Constrained Economic Dispatch are indistinguishable from one another.
- 7.2.1.4 The provision of Ancillary Services indicated in Clause a through d, within the limits established in the Grid Code, is mandatory for all Generators and Transmission Service Providers, and shall be provided at zero cost. Generators and the Transmission Service Providers are obligated to implement the decisions taken by the System Operator, including a decision related with the provision of Ancillary Services, within the limits established in the Grid Code.

- 7.2.1.5 Notwithstanding anything provided in Clause 7.2.1.4, a Market Participant is entitled to receive an economic compensation for:
- a. Its revenue loss due to an instruction issued by the System Operator to generate below the maximum Available Capacity of a Generation Unit, while its Variable Cost is lower than the System Marginal Price, for providing one or more of the Ancillary Services indicated in Clause a through d, or for allowing other Generation Unit to provide them (loss of opportunity cost); and
  - b. Being instructed to produce Energy by a Generation Unit, while its Variable Generation Cost is greater than the System Marginal Price, for providing one or more of the Ancillary Services indicated in Clause a through d, or for allowing other Generation Unit to provide these (out of merit instructed generation); and
  - c. For being able to provide Black Start, if such cost has been approved by the Authority through the corresponding regulations and explicitly reflected in its generation tariff. Until the moment the Authority issues such regulation and/or authorizations through the generation tariffs, this compensation shall be suspended.
- 7.2.1.6 The System Operator shall inform the Market Operator in any case a Generator failed or refused to provide any of the Ancillary Services it is mandated for. Notwithstanding any further action that may be taken by the Market Operator or System Operator associated with such non-compliance, a Generator which failed or refused to provide an Ancillary Service mandated by the System Operator shall not be entitled to receive any kind of economic compensation.

### **7.3 COMPENSATION FOR PROVISION OF ANCILLARY SERVICES**

#### **7.3.1 GENERATORS ENTITLED TO RECEIVE COMPENSATION**

- 7.3.1.1 The System Operator shall determine, on daily basis and for each Balancing Period, the Generation Units for which a Generator is entitled to receive compensations for:
- a. Providing Ancillary Services; or
  - b. Modifying their Energy production to allow other Generation Units to provide Ancillary Services.
- 7.3.1.2 The System Operator shall determine, on daily basis and for each hour of the day, the amount of Energy that shall be compensated for Generation Units for which a Generator is entitled to receive compensations for providing, or allow other Generation Units to provide, Ancillary Services.
- 7.3.1.3 Within six [6] month from the issuing of this Code, the System Operator will develop, and submit to the Authority for approval, a Commercial Code Operational Procedure for determining which Generators are entitled to receive the compensations indicated in Clause 7.3.1.1, as well as the amounts for which the Generators have to be compensated. Until such moment, the procedure included in Annex I will be used.



- 7.3.1.4 The System Operator shall communicate, on daily basis, to the Market Operator the amounts of Energy that should be compensated to each Generator for each Generation Unit for providing, or allow other Generation Units to provide, Ancillary Services.
- 7.3.1.5 The amounts of Energy to be compensated to each Generator, for each Generation Unit, shall be published on the System Operator’s website, along with all necessary supporting information and/or corresponding explanations, in order the Market Participants to be able to clearly assess the reasons for such Energy compensations.

### 7.3.2 COMPENSATION AMOUNTS FOR REDUCING GENERATION

- 7.3.2.1 The Market Operator shall calculate the Energy not generated by a Generator at each Balancing Period (one hour), to allow the production of Ancillary Services, using the following information:
  - a. Information provided by the System Operator:
    - i. List of Generation Units for which a Generator is entitled to receive compensation for allowing the production of Ancillary Services, as per Clause 7.3.1.1;
    - ii. Available Capacity of the Generation Unit for which a Generator entitled to receive compensation, at the corresponding Balancing Period;
  - b. Information from the Commercial Metering System:
    - i. Energy actually produced by the Generation Unit for which a Generator entitled to receive compensation, at the corresponding Balancing Period.
- 7.3.2.2 Until the System Operator develops the Operational Procedure referred in Clause 7.3.1.3, the Market Operator will determine the amount Energy which will be compensated to Generators entitled to receive compensation for allowing the production of Ancillary Services, which has reduced the Energy potentially produced as:

$$LOCC\_AASS_{i,h}[MWh] = 0.95 * AC_{i,h}[MW] * 1[h] - EAG_{i,h}[MWh]$$

Where:

$LOCC\_AASS_{i,h}$  is the amount of Energy to be compensated to a Generation Unit  $i$ , in hour  $h$ , due to the reduction in the Energy generated, to produce Ancillary Services or allow the production of Ancillary Services by other Generation Units, in MWh (Loss of Opportunity Cost Compensation)

$AC_{i,h}$  is the Available Capacity of Generation Unit  $i$ , in hour  $h$ , in MW, communicated by the System Operator to the Market Operator.

$EAG_{i,h}$  is the Energy produced by Generation Unit  $i$ , in hour “ $h$ ”, in MWh, obtained through the Commercial Metering System.

0.95 is a factor that considers that Generation Units are obligated to provide Frequency Containment Reserve.

### 7.3.3 COMPENSATION AMOUNTS FOR INCREASED GENERATION

7.3.3.1 The Market Operator shall calculate the Energy Generated by a Generation Unit, whose Variable Generation Cost is above the System Marginal Price, at each Balancing Period (one hour), to allow the production of Ancillary Services, using the following information:

- c. Information provided by the System Operator:
  - i. List of Generation Units for which a Generator is entitled to receive compensation for allowing the production of Ancillary Services, as per Clause 7.3.1.1;
  - ii. If it corresponds, Energy that the Generation Unit would have produced if no Ancillary Services had been required, in cases this value is different from zero.
- d. Information from the Commercial Metering System:
  - i. Energy actually injected into the grid by the Generation Unit for which a Generator is entitled to receive compensation, at the corresponding Balancing Period.

7.3.3.2 Until the System Operator develops the Operational Procedure referred in Clause 7.3.1.3, the Market Operator will determine the amount Energy which be compensated to Generators entitled to receive compensation for allowing the production of Ancillary Services, which has been dispatched although its variable production cost is above the System Marginal Price as:

$$UPC\_AASS_{j,h}[MWh] = EAG_{j,h}[MWh] - EPG_{j,h}[MWh]$$

Where:

$UPC\_AASS_{j,h}$  is the amount of Energy to be compensated to Generation Unit “j”, in hour  $h$ , due to the increase in the Energy Generated with Variable Generation Costs above the System Marginal Price, to produce Ancillary Services or allow the production of Ancillary Services by other Generation Units, in MWh (Variable Cost Compensation)

$EAG_{j,h}$  is the Energy produced by Generation Unit “j”, in hour “h”, in MWh, obtained through the Commercial Metering System.

$EPG_{j,h}$  is the amount of Energy that Generation Unit “j”, in hour “h”, would have Generated if there had been no requirements of providing Ancillary Services (in MWh). The value of  $EPG_{j,h}$  will be zero (0.0) unless the System Operator explicitly indicate to the Market Operator to use a different value, clearly stating the reasons for this value being used.

### 7.3.4 TOTAL ECONOMIC COMPENSATIONS FOR THE PRODUCTION OF ANCILLARY SERVICES

7.3.4.1 The Market Operator shall determine the economic compensations to be received by a Generator, at each Energy Balancing Period, associated with the provision of Ancillary Services as:

$$AC_{k,h}[PKR] = \sum_{i \in k} [LOCC\_AASS_{i,h}[MWh] * (Marg_h[PKR/MWh] - VC_{i,h})] + \sum_{j \in k} [UPC\_AASS_{j,h}[MWh] * (VC_i - Marg_h[PKR/MWh])]$$

Where:

$AC_{k,h}$  is the hourly amount to be compensated to Generator “k” during hour “h” associated with the provision of Ancillary Services, in PKR;

$LOCC\_AASS_{i,h}$  is the amount of Energy to be compensated to Generation Unit “i”, in hour h, due to the reduction in the Energy Generated, to produce Ancillary Services or allow the production of Ancillary Services by other Generation Units, in MWh, as calculated pursuant Clause 7.3.2.2

$UPC\_AASS_{j,h}$  is the amount of Energy to be compensated to Generation Unit “j”, in hour h, due to the increase in the Energy Generated with Variable Generation Costs above the System Marginal Price, to produce Ancillary Services or allow the production of Ancillary Services by other Generation Units, in MWh, as calculated pursuant 7.3.3.2

$Marg_h$  is the System Marginal Price of hour “h”, determined by the System Operator pursuant Section 6.5;

$VC_i$  is the Variable Generation Cost of Generation Unit “i” at hour “h”, registered by the Market Operator;

$\sum_{i \in k}$  is the sum over all Generation Units “i” which belongs to Generator “k”

$\sum_{j \in k}$  is the sum over all Generation Units “j” which belongs to Generator “k”.

7.3.4.2 The Market Operator shall determine the monthly total economic compensations to Generator, associated with the provision of Ancillary Services, as the sum, over all the hours of the Settlement Period, of the hourly compensation plus the additional compensations indicated in Clause 7.3.4.3, if it corresponds

7.3.4.3 Generators which have been instructed by the System Operator to start a Generation Unit and connect it to the Transmission or Distribution Network, as the case may be, may receive an additional compensation for excessive number of starts, provided that:

- a. The Authority has issued appropriate regulations in relation with the compensation of Generation start-up costs; or
- b. The Authority has clearly recognized this cost in the issued Generation tariff applicable to a Generation Unit, which has not been embedded in the Fixed or Variable parts of such tariff, also indicating the number of starts from which this compensation should be received; or
- c. The excessive number of starts has been explicitly stated as an item of payment in the corresponding Legacy Contract, which also indicates the number of starts from which this item shall be invoiced.

7.3.4.4 For the cases in which Clause 7.3.4.3 applies, the System Operator shall notify to the Market Operator, at the end of each calendar month:

- a. The Generators which are entitled to receive an economic compensation for excessive number of starts of a Generation Unit;
- b. The total number of starts of the Generation Unit, during the previous calendar month;
- c. The number of starts which were associated with the provision of Ancillary Services, during the previous calendar month;
- d. The maximum number of starts allowed for such Generation Unit, according with the Generation tariff approved by the Authority or the Legacy Contract, as the case may be;
- e. The number of starts that shall be economically compensated to the Generator.

7.3.4.5 The monthly total economic compensations to a Generator, associated with the provision of Ancillary Services shall be calculated as:

$$MAC_{k,m} = \sum_{h=1}^T AC_{k,h}[PKR] + \sum_{i \in k} (NS_i * SC_i) + BSC_k$$

Where:

$MAC_{k,m}$  is the amount to be compensated to Generator “k” during the Settlement Period “m” associated with the provision of Ancillary Services, in PKR;

$AC_{k,h}$  is the hourly amount to be compensated to Generator “k” during hour “h” associated with the production of Ancillary Services, in PKR, calculated pursuant Clause 7.3.4.1;

$NS_i$  is the number of starts of Generation Unit “i” belonging to Generator “k” which has excessive number of starts, during the Settlement Period, associated with the provision of Ancillary Services. This information shall be notified by the System Operator to the Market Operator pursuant Clause 7.3.4.3;

$SC_i$  Starting cost of Generation Unit “i”, registered with the Market Operator in the Market Participants Register;

$BSC_k$  Monthly payments to Generator “k” for the provision of Black Start Capability. This value will be zero, unless the Authority notifies the Market Operator something in contrary.

$\sum_{i \in k}$  is the sum over all Generation Units “i” which belongs to Generator “k”

$T$  is the total number of hours in the Settlement Period.

## 7.4 DETERMINATION OF THE AMOUNTS RECEIVABLE AND PAYABLE FOR AASS AND MUST RUN GENERATION

### 7.4.1 ASSIGNATION OF ANCILLARY SERVICES AND MUST RUN COMPENSATIONS TO MARKET PARTICIPANTS (RECEIVABLE AMOUNTS)

7.4.1.1 Within five [5] working days immediately after the end of each month, the Market Operator shall determine the compensations for Generators which are entitled to receive compensations for producing, or allow other Generators producing, Ancillary Services and Must Run Generation and it will assign such compensations to each Market Participant as an Amount Receivable.

7.4.1.2 The Market Operator shall assign the compensations referred to in Clause 7.4.1.1 as:

- a. In cases the Market Participant which owns the Generation Unit or Generation Plant does not have any bilateral contract included in the Contract Register of the Market Operator, the Market Operator will assign the rights to receive such economic compensation (Amount Receivable) to such Market Participant; and
- b. In cases in which the Market Participant which owns the Generation Unit or Generation Plant has one or more bilateral contracts included in the Contract Register of the Market Operator, the Market Operator shall assign the rights to receive such compensation (Amounts Receivable) either to the Generator or to the counterpart of such bilateral contract, as per the information received from the parties when such bilateral contracts were registered.

### 7.4.2 DISTRIBUTION OF THE COSTS FOR ANCILLARY SERVICES AND MUST RUN COMPENSATIONS AMONG MARKET PARTICIPANTS

7.4.2.1 Within five [5] working days immediately after the end of each month, the Market Operator shall distribute the costs associated with compensations for the provisions of Ancillary Services and Must Run Generation among all Market Participants which represent demand, as a function to the total Energy demanded during the corresponding Settlement Period and the areas in which the Generators which deserve compensation are located (Amounts Payable).

7.4.2.2 Following procedure shall be utilized by the Market Operator to implement the provision stated in Clause 7.4.2.1:

- a. Determination of the total amount of compensation for the provision of Ancillary Services and Must Run Generation at each Permanently Congested Area. These amounts shall be calculated as:

$$TAC_{AR_s,m}[PKR] = \sum_{\forall i \in AR_s} (MAC_{k,m}) + \sum_{\forall j \in AR_s} (MMR_{k,m})$$

Where:

$TAC_{AR_s,m}$  is the total amount to be compensated to Generators located in the Permanently Restricted Area “s”, for provision of Ancillary Services and Must Run Generation in the Settlement Period “m”, in PKR;

$MAC_{k,m}$  is the amount to be compensated to Generator “k” during the settlement period “m” associated with the provision of Ancillary Services, calculated as per Clause 7.3.4.5;

$MMR_{k,m}$  is the amount to be compensated to Generator “k” during the settlement period “m” associated with the provision of Must Run Generation, calculated as per Clause 7.1.3.4;

$\forall i \in AR_s$  means all Generators which are connected to a network located in the Permanently Congested Area “s”, which deserve compensation for the provision of Ancillary Services.

$\forall j \in AR_s$  means all Generators which are connected to a network located in the Permanently Congested Area “s”, which deserve compensation for Must Run Generation.

b. Determination of the total Energy supplied for each Market Participant registered as Supplier or demanded by a BPC which is a Market Participant, in each Permanently Restricted Area. This calculation of this Energy will be different in case of BPCs, Competitive Suppliers and Base Suppliers.

i. In the case of a BPC which is a Market Participant, the Energy demanded shall be the Energy registered at the corresponding Metering Point:

$$ES\_BPC_{i,ARS,m}[MWh] = \sum_{h=1}^T E_{MP_{i,h}}$$

Where:

$ES\_BPC_{i,ARS,m}$  is the total Energy supplied to BPC “i”, which is located in the Permanently Restricted Area “ARs”, during the Settlement Period “m”, in MWh;

$E_{MP_{i,h}}$  is the Energy taken by BPC “i”, which is located in the Permanently Restricted Area “ARs” in hour “h”, measured by the Commercial Metering System of such BPC, in MWh

$T$  is the total number of hours in the Settlement Period “m”

ii. In the case of Competitive Suppliers, the Energy supplied shall be the addition of the Energy supplied to all the BPCs served by the Competitive Supplier:

$$ES\_CS_{j,ARS,m}[MWh] = \sum_{h=1}^T \left( \sum_{\forall BPC_i \in ARS} E_{MP_{i,h}} \right)$$

Where:

$ES\_CS_{j,ARS,m}$  is the total Energy supplied by the Competitive Supplier “j”, to BPCs located in the Permanently Restricted Area “ARs”, during the Settlement Period “m”, in MWh;

$E_{MP_{i,h}}$  is the Energy demanded by BPC “i”, located in the Permanently Restricted Area “ARs”, which is supplied by Competitive Supplier “j” in hour “h”, measured by the corresponding Commercial Metering Systems, in MWh

$\sum_{\forall BPC_i \in ARs}$  means the addition over all BPCs supplied by the Competitive Supplier which are located in the Permanently Restricted Area “ARs”

$T$  is the total number of hours in the Settlement Period “ $m$ ”

- iii. In the case of Base Suppliers, the Energy supplied shall be calculated through an appropriate balance of the total Energy taken by the Base Supplier plus the Energy injected by Generation Units owned by the Base Supplier, multiplied by a factor which takes into account the losses in the Distribution Network.

$$ES\_BS_{k,ARS,m}[MWh] = \sum_{h=1}^T \left[ \left( \sum_{\forall i \in TP_{ARS}} E_{TP_{i,ARS,h}} + \sum_{\forall i \in MP_{ARS}} E_{MP_{j,ARS,h}} \right) * (1 + FP_k) \right]$$

Where:

$ES\_BS_{k,ARS,m}$  is an estimation of the total Energy supplied by the Base Supplier “ $k$ ”, to its customers located in the Permanently Restricted Area “ARs”, during the Settlement Period “ $m$ ”, in MWh;

$E_{TP_{i,ARS,h}}$  is the Energy interchanged at the Trading Point “ $i$ ”, belonging to the Base Supplier “ $k$ ”, located in the Permanently Restricted Area “ARs”, in hour “ $h$ ”, measured by the corresponding Commercial Metering Systems, in MWh. This interchange shall be considered positive if the Energy is flowing into the Distribution Network for which the Base Supplier “ $k$ ” is its supplier and negative if the Energy is flowing out of such Distribution Network.

$E_{MP_{j,ARS,h}}$  is the Energy interchanged at the Metering Point “ $j$ ”, which is not a Trading Point, belonging to the Base Supplier “ $k$ ”, located in the Permanently Restricted Area “ARs”, in hour “ $h$ ”, measured by the corresponding Commercial Metering Systems, in MWh. This interchange shall be considered positive if the Energy is flowing into the Distribution Network for which the Base Supplier “ $k$ ” is its supplier and negative if the Energy is flowing out of such Distribution Network. Only positive values shall be used in the calculation.

$FP_k$  is the aggregated Loss Factor for the Base Supplier “ $k$ ”, which takes into account the allowed losses in the Distribution Network for which the Base Supplier “ $k$ ” is its Supplier. This Loss Factor shall be determined by the Authority in each Tariff Determination applicable to this Supplier.

$\sum_{\forall i \in TP_{ARS}}$  means the addition over all Trading Points belonging to the Base Supplier “ $k$ ”, which are located in the Permanently Restricted Area “ARs”

$\sum_{\forall i \in MP_{ARS}}$  means the addition over all Metering Points which are not Trading Points, belonging to the Base Supplier “ $k$ ”, which are located in the Permanently Restricted Area “ARs”

$T$  is the total number of hours in the Settlement Period “ $m$ ”

c. Determination of the charges applicable to each Market Participant registered as Supplier or BPC. Such charges shall be calculated as:

iv. For a BPC which is a Market Participant:

$$TC\_BPC_{i,m}[PKR] = \sum_{s=1}^n \left[ TAC_{ARS,m} * \frac{ES\_BPC_{i,ARS,m}}{(\sum_i ES\_BPC_{i,ARS,m} + \sum_j ES\_CS_{j,ARS,m} + \sum_k ES\_BS_{k,ARS,m})} \right]$$

v. For a Market Participant registered as Competitive Supplier:

$$TC\_CS_{j,m}[PKR] = \sum_{s=1}^n \left[ TAC_{ARS,m} * \frac{ES\_CS_{j,ARS,m}}{(\sum_i ES\_BPC_{i,ARS,m} + \sum_j ES\_CS_{j,ARS,m} + \sum_k ES\_BS_{k,ARS,m})} \right]$$

vi. For a Market Participant registered as Base Supplier:

$$TC\_BS_{k,m}[PKR] = \sum_{ARS=1}^n \left[ \frac{TAC_{ARS,m} * ES\_BS_{k,ARS,m}}{(\sum_{i \in ARS} ES\_BPC_{i,ARS,m} + \sum_{j \in ARS} ES\_CS_{j,ARS,m} + \sum_{k \in ARS} ES\_BS_{k,ARS,m})} \right]$$

Where:

$TC\_BPC_{i,m}$  are the total charges to be applied to Market Participant “ $i$ ”, registered with the Market Operator as BPC, for Ancillary Services and Must Run Generation, in the Settlement Period “ $m$ ”, in PKR.

$TC\_CS_{j,m}$  are the total charges to be applied to Market Participant “ $j$ ”, registered with the Market Operator as Competitive Supplier, for Ancillary Services and Must Run Generation, in the Settlement Period “ $m$ ”, in PKR.

$TC\_BS_{k,m}$  are the total charges to be applied to Market Participant “ $k$ ”, registered with the Market Operator as Base Supplier, for Ancillary Services and Must Run Generation, in the Settlement Period “ $m$ ”, in PKR.

$TAC_{ARS,m}$  is the total amount to be compensated to Generators located in the Permanently Restricted Area “ $s$ ”, for provision of Ancillary Services and Must Run Generation in the Settlement Period “ $m$ ”, calculated pursuant the formulation indicated in Clause a

$ES\_BPC_{i,ARS,m}$  is the Energy supplied to BPC “ $i$ ”, which is located in the Permanently Restricted Area “ $ARS$ ”, during the Settlement Period “ $m$ ”, in MWh, calculated pursuant the formulation indicated in Clause i



$ES\_CS_{j,ARS,m}$  is the Energy supplied by the Competitive Supplier “j”, to BPCs located in the Permanently Restricted Area “ARs”, during the Settlement Period “m”, in MWh, calculated pursuant the formulation indicated in Clause ii

$ES\_CS_{k,ARS,m}$  is the Energy supplied by the Base Supplier “k”, to its customers located in the Permanently Restricted Area “ARs”, during the Settlement Period “m”, in MWh, calculated pursuant the formulation indicated in Clause iii

means the addition of all BPCs registered as Market Participant which are located in the Permanently Restricted Area “ARs”

$$\sum_{j \in ARs}$$

means the addition of all Market Participants registered as Competitive Suppliers which are supplying BPCs which are located in the Permanently Restricted Area “ARs”

$$\sum_{k \in ARs}$$

means the addition of all Market Participants registered as Base Suppliers which are supplying consumers located in the Permanently Restricted Area “ARs”

$$\sum_{ARS=1}^n$$

means the addition of all the Permanently Congested Areas of Pakistan.

#### 7.4.3 PUBLICATIONS OF ANCILLARY SERVICES AND MUST RUN GENERATION RESULTS

7.4.3.1 The Market Operator shall document and publish, in its website, the results of the calculations of Amounts Payable and Amounts Receivable, for the provision of Ancillary Services and Must Run Generation, on a monthly basis.

7.4.3.2 The information that the Market Operator shall make publicly available in its web page, shall include:

- a. The compensations that Generators are entitled to receive for producing, or allowing other Generators to produce, Ancillary Services and Must Run Generation, for each Generation Unit;
- b. The assignation of the compensations to Generators or to other Market Participants;
- c. The Amounts Payable and Amounts Receivable of each Market Participant for the provision of Ancillary Services and Must Run Generation; and
- d. Any comment or remark the Market Operator deems suitable for proper understanding of the published results.

### 7.5 SERVICE PROVIDERS CHARGES

#### ~~7.5.1 TRANSMISSION USE OF SYSTEM CHARGES~~

7.5.1.1 The Market Operator shall calculate the Transmission Use of System Charges, payable by each Market Participant, in accordance with the formulations as determined by the Authority in each Transmission Service Provider Tariff Determination.

## **7.5.2 METERING SERVICES CHARGES**

7.5.2.1 The costs associated with providing Metering Services are embedded in NTDC overall costs, as determined by the Authority in NTDC Tariff Determination.

7.5.2.2 If the Authority decides to carve out the Metering Services costs from Transmission Service Provider's overall costs and/or independent Metering Service Providers are authorized by the Authority, the Market Operator shall calculate the Metering Service Charges, payable by each Market Participant, in accordance with the formulations issued by the Authority in the corresponding determinations.

## **7.6 OPERATORS CHARGES**

### **7.6.1 MARKET OPERATOR AND SYSTEM OPERATOR FEE**

7.6.1.1 The Market Operator shall calculate the Market Operator Fee and, if it corresponds, the System Operator Fee, payable by each Market Participant, in accordance with the formulations as determined by the Authority in the Tariff Determination of the Market Operator and the System Operator.

## 8. MONTHLY SETTLEMENT (MARKET PARTICIPANTS AND SERVICE PROVIDERS)

### 8.1 MARKET SETTLEMENT SYSTEM

#### 8.1.1 MARKET SETTLEMENT SYSTEM ADMINISTRATION

- 8.1.1.1 The Market Operator shall administer a Market Settlement System which shall be operated on monthly basis. The Market Operator shall be responsible for the development and maintenance of the required software and associated data bases for the operation of the Market Settlement System.
- 8.1.1.2 The Market Operator shall be responsible for verification of data and the accuracy of the outputs of the Market Settlement System, which, in turn shall be based on:
- a. The regulations, determinations and/or directions issued by the Authority;
  - b. The information provided by the Metering Service Providers;
  - c. The information submitted by the System Operator; and
  - d. The information contained in the Market Participants and Contract registers, maintained by the Market Operator.
- 8.1.1.3 The Market Operator shall not modify the Settlement Software without prior intimation to the Market Participants and, in case of material changes, shall implement the same only after the amended Settlement Software is audited in accordance with Clause 8.1.1.4 below.
- 8.1.1.4 On [June 1<sup>st</sup>] each year, or prior to implementation of any modification to then existing Settlement Software, the Settlement Software shall be audited by an independent auditor competent to carry out audits of such software to determine its consistency with this Code. In any dispute regarding Settlement calculations, a certificate of such auditor that the Settlement Software is consistent with this Code shall be evidence that the charges or payments shown in a Settlement Statement have been calculated by a method consistent with this Code.

#### 8.1.2 MARKET SETTLEMENT SYSTEM FUNCTIONS

- 8.1.2.1 The Market Settlement System, administered by Market Operator, shall be capable to perform the following functions:
- a. Calculate the settlement of the Balancing Mechanism for Energy, for all Market Participants as per the formulations indicated in 6 of this Code;
  - b. Calculate the settlement of the Ancillary Services and Must run Generation, for all Market Participants as per the formulations indicated in 7 of this Code;
  - c. Calculate the Transmission Use of System Charges for all Transmission Service Providers, as indicated in Clause 7.5.1.1 of this Code;
  - d. If it corresponds, calculate the Metering Service Charges for all Metering Service Providers, as indicated in Clauses 7.5.2.2 of this Code;
  - e. Calculate the Default Interest, payable or accrued by Market Participants, as established in Clauses 8.1.3.1 and 8.1.3.2 of this Code; and

- f. Calculate the Market Operator Fee and, if it corresponds, the System Operator Fee, as per the Authority determinations.

8.1.2.2 The Market Settlement of a Market Participant, for a month, shall be calculated as follows:

- a. The amount payable or receivable by the Market Participant, as the case may be, for the participation in the Balancing Mechanism for Energy, calculated as per Section 6.6 of this Code; plus
- b. The amount payable or receivable by the Market Participant, as the case may be, for dispatch of Must Run Generation and the Ancillary Services participation, calculated as per 7 of this Code; plus
- c. The amount payable by the Market Participant for the Use of the Transmission Network, calculated as per the latest Tariff Determination for the Transmission Licensees, issued by the Authority; plus
- d. The amount payable by the Market Participant for the Market Operator fee and, if applicable, for the System Operator fee, as determined by the Authority; plus
- e. If it corresponds, the amount payable by the Market Participant for the provision of Metering Services, calculated as per the determinations issued by the Authority; plus
- f. The amount payable to or receivable by the Market Participant due to corrections to the Market Transactions, arising from Extraordinary Settlements as per Sub-Section 8.2.4; plus
- g. The amount payable to or receivable by the Market Participant corresponding to accrued interest for previous payments not made or received on time; plus
- h. Any other charge or surcharge that the Authority may determine, from time to time, shall be collected and disbursed by the Market Operator.

### 8.1.3 ADDITIONAL CHARGES AND PAYMENTS

8.1.3.1 The Market Operator shall levy additional charges or payments as special adjustments in respect of costs incurred by the Market Operator for executing Security covers and Default Interest, as defined in sub-Section 13.3.2, for Market Participants payments not made in time. These costs shall be allocated to the Market Participant(s) responsible where default resulted in such costs or interest arising.

8.1.3.2 The Market Operator shall determine the Default Interest accrued by Market Participants and Service providers for payments not executed at the Payment Date due to insufficient funds in the Market Operator's Clearing Account. These amounts shall be allocated to the Market Participants which payments were not transferred at the Payments Date.

## 8.2 SETTLEMENT STATEMENTS

### 8.2.1 PRELIMINARY SETTLEMENT STATEMENTS

8.2.1.1 Within ten (10) working days of the beginning of each month, the Market Operator shall send, through electronic means, to each Market Participant and to the Service Providers, a Preliminary Settlement Statement corresponding to the results of the previous month.

- 8.2.1.2 The Preliminary Settlement Statement for Market Participants shall, at least, include:
- a. The results of the Balancing Mechanism for Energy
    - i. The hourly values of the Energy injected or withdraw from the Transmission or Distribution Network, as it corresponds during the Settlement Period;
    - ii. The Energy sold and bought through contracts, registered with the Market Operator, for each hour of the Settlement Period;
    - iii. The hourly Energy Imbalances;
    - iv. The System Marginal Price for each hour of the Settlement Period; and
    - v. The total amount payable or receivable;
    - vi. The Transmission losses and the Transmission and Distribution Loss Factors used in the calculations;
  - b. The results associated with Must Run Generation and Ancillary Services, corresponding to each Market Participant for the Settlement Period;
  - c. The Use of System Charges corresponding to the Market Participant for the Settlement Period, calculated as per the latest Tariff Determination for the Transmission Licensees, issued by the Authority;
  - d. The Market Operator Fee and, if it corresponds, System Operator Fee, in the case the Authority determines that such fee shall be collected separated from the Use of System Charges of the Transmission Company which acts as System Operator;
  - e. The payable or accrued interest for previous payments not made on time;
  - f. The eventual corrections associated with any eventual Extraordinary Settlement; and
  - g. Any other charge or surcharge that the Authority may determine, from time to time, shall be collected and disbursed by the Market Operator.
- 8.2.1.3 The Preliminary Settlement Statement for Service Providers shall, at least, include:
- a. The amounts payable by each Market Participant for the Use of System Charges, calculated as per the latest Tariff Determination for the Transmission Licensees, issued by the Authority;
  - b. The total amount receivable by the Transmission Licensees for the Use of System, calculated as per the latest Tariff Determination for the Transmission Licensees, issued by the Authority;
  - c. The amounts receivable by the Metering Service Providers and the amounts payable by each Market Participant for Metering Services, in case the Authority determines these charges will be collected separated from the charges associated with the Use of System; and
  - d. The eventual corrections associated with any eventual Extraordinary Settlement; and
  - e. The accrued interest for previous payments not made on time.

## 8.2.2 CLAIMS ASSOCIATED TO THE PRELIMINARY SETTLEMENT STATEMENTS

- 8.2.2.1 In case a Market Participant or a Service Provider considers that an error or discrepancy exists in the Preliminary Settlement Statement, it shall provide the Market Operator with a written Notice of Claim within [five (5)] working days of receipt of the Preliminary Settlement Statement.
- 8.2.2.2 The Notice of Claim shall state clearly the Settlement Period, Dispatch Day, the issue date of the Preliminary Settlement Statement, the item claimed, the reasons for the claimed, the amount claimed, if appropriate, and shall be accompanied by all available evidence to support the claim.
- 8.2.2.3 The Market Operator shall review the Preliminary Settlement Statement in the light of the claim of such Market Participant or Service Provider and conclude whether the claim is correct or incorrect, before releasing the Final Settlement Statement to Market Participants and Service Providers.
- 8.2.2.4 If the Market Operator does not agree with the matters set out in the claim, it shall make reasonable efforts, taking into account the time it received the Notice of Claim and the complexity of the issue involved, notify the relevant Market Participant and resolve the issue before issuing the Final Settlement Statement. The Market Operator may request the relevant Market Participant or Service Provider to provide additional information in respect of disputed items.
- 8.2.2.5 The Market Operator shall notify affected Market Participants of the claimed error or discrepancy in the Preliminary Settlement Statement and whether or not the claimed error or discrepancy shall be corrected in the Final Settlement Statement, attaching all necessary supporting documentation.

## 8.2.3 FINAL SETTLEMENT STATEMENTS

- 8.2.3.1 Within twenty-five [25] working days after the beginning of each month, the Market Operator shall send the Final Settlement Statement to each Market Participant and Service Provider, using a format similar to the Preliminary Settlement Statement.
- 8.2.3.2 A Market Participant or a Service Provider may challenge the Final Settlement Statement with a valid justification within [15] working days of its issuance. This dispute may relate to:
  - a. The registered quantities, or
  - b. The settled amounts, either in transactions settled by the Market Operator, Use of System charges, Market Operator's Fee, if it corresponds, System Operator Fee, interest charges for late payments or any other item which has been included in the Final Settlement Statement.
- 8.2.3.3 The Market Operator and the Market Participant shall make reasonable efforts to mutually settle the disputes within [30] calendar days after the dispute is submitted to the Market Operator. If the Market Operator and the Market Participant are unable to settle the dispute, any of the parties may refer to the dispute resolution mechanism in accordance with 15 of this Code.

## 8.2.4 EXTRAORDINARY SETTLEMENTS

- 8.2.4.1 When:

- a. The Market Participant and the Market Operator resolve a complaint in a manner that causes the mutually agreed upon settlement amount to differ from the Final Settlement Statement; or
- b. The application of the dispute resolution mechanism indicated in Sub-Section 15.5 in relation with a Disputed Amount is resolved in a way which implies a recognition of all or part of the claims raised by the Market Participant or Service Provider;

the Market Operator shall produce an Extraordinary Settlement Statement for the corresponding month.

8.2.4.2 The Extraordinary Settlement indicated in clause 8.2.4.1 will supersede the previously issued Final Settlement Statement for such month.

8.2.4.3 The Market Operator shall calculate, for each Market Participant, the differences between the Extraordinary Settlement Statement and the Final Settlement Statement originally issued, according with the prescriptions indicated in Sub-section 8.2.1, and it will include the corresponding corrections in the Preliminary and Final Settlement Statement of the month immediately after the complaint has been resolved.

## **8.2.5 FAILURE OF THE SETTLEMENT SYSTEM**

8.2.5.1 In the case of emergencies and/or failure of the settlement system, the Market Operator may issue an Estimated Settlement Statement and/or modify the schedule for issuing Preliminary Settlement Statements and/or Final Settlement Statements. In such cases, the Market Operator shall inform all Market Participants the temporary procedural changes as soon as practicable.

## **8.3 PAYMENT NOTIFICATIONS AND CREDITED AMOUNTS**

### **8.3.1 NOTIFICATIONS TO MARKET PARTICIPANTS**

8.3.1.1 The Market Operator, within 2 working days after issuance of the Final Settlement Statement, shall:

- a. Issue a Payment Notification in respect of the previous month to all Market Participants which resulted in the Final Settlement Statement with an amount payable, indicating the charge that each shall pay. This amount shall be coincident with the Final Settlement Statement, which at the same time will act as a description of the detailed calculations.
- b. Issue a Credit Notification in respect of the previous month to all Market Participants which resulted in the Final Settlement Statement with an amount receivable. These amounts shall be coincident with the Final Settlement Statement, which at the same time will act as a description of the detailed calculations.

8.3.1.2 The Market Operator, in this process, shall act as an independent entity, without assuming payment responsibilities. Obligation of Payment and debts shall remain with the relevant Market Participants. For the avoidance of doubt, the Market Operator shall not be held liable for any kind of non-payment by any of the Market Participants or Service Providers.

### 8.3.2 DISAGREEMENTS WITH THE NOTIFICATIONS

- 8.3.2.1 Each Market Participant which receives a Payment or Credit Notification, as per clause 8.3.1.1 above, shall pay any net debit, and shall be entitled to receive any net credit, shown in the Final Settlement Statement on the Payment Date, whether or not there is any dispute regarding the amount of the debit or credit.
- 8.3.2.2 The payment of the amount by the Market Participant or the Market Operator, as the case may be, pursuant to clause 8.3.2.1 shall not prejudice the right of the Participant to seek resolution of the dispute pursuant to 15 of this Code.



## 9. FIRM CAPACITY CERTIFICATION

### 9.1 PROCEDURES FOR FIRM CAPACITY CERTIFICATION

#### 9.1.1 CHARACTERISTICS OF FIRM CAPACITY CERTIFICATES

- 9.1.1.1 Firm Capacity Certificates, issued by the Market Operator, will have a nominal value of 0.1 MW, and cannot be subdivided.
- 9.1.1.2 Each Firm Capacity Certificate shall have a unique identification number which will be used to track and register Capacity transactions among Market Participants.

#### 9.1.2 OBLIGATION OF HAVING FIRM CAPACITY CERTIFICATES

- 9.1.2.1 Generators or other Market Participants which represent Generators, which sell Capacity in the CTBCM, or are expecting to perform such kind of transactions, shall obtain Firm Capacity Certificates, issued by the Market Operator, associated with the Physical Asset involved. In absence of such certification, the Firm Capacity allocated to the Generator or Market Participants which represent Generators shall be considered zero.
- 9.1.2.2 Traders or Suppliers which have Import Contracts for Energy or Capacity may also obtain Firm Capacity Certificates, which number will be subject to the specific characteristics of the Import Contract and the specific guarantees issued by the seller and reflected in the Contract, of such Capacity or Energy.
- 9.1.2.3 The Capacity, that a Market Participant is allowed to sell in all the contracts registered by the Market Participant with Market Operator, shall be lower or equal to the total amount of Firm Capacity Certificates it owns.
- 9.1.2.4 The Firm Capacity Certificates issued by the Market Operator shall have a validity of a maximum of five (05) years. Upon expiration of its validity, the Firm Capacity Certificates should be renewed.

#### 9.1.3 OBTAINING FIRM CAPACITY CERTIFICATES

- 9.1.3.1 One month before the initiation of the CTBCM, the Market Operator will issue and distribute the Firm Capacity Certificates, named Initial Firm Capacity Certificates, to each Generator having Generation Units or Generation Plants commissioned, or expected to be commissioned, before CMOD.
- 9.1.3.2 Initial Firm Capacity Certificates for Import Contracts shall be issued by the Market Operator taking into account the particular characteristics of the Contract.
- 9.1.3.3 For new Generation Units or Generation Plants, commissioned or expected to be commissioned after the initiation of the CTBCM, the Initial Firm Capacity Certificates will be issued by the Market Operator upon request of the involved Generator.
- 9.1.3.4 For Traders or Suppliers, which procure Energy or Capacity through Import Contracts after the initiation of the CTBCM the Initial Firm Capacity Certificates may be issued by the Market Operator upon request of the involved Trader or Supplier.

- 9.1.3.5 Generators or Traders or Suppliers with Import Contracts, which intend to obtain the Initial Firm Capacity Certificates, shall apply to the Market Operator, not earlier than two months before the expected COD. The appliers shall provide to the Market Operator all the information necessary to issue such certification.
- 9.1.3.6 In case the Market Operator, in its reasonable opinion, considers that the received information may be false or misleading, especially in those cases in which the submitted information may have material impacts on the amount of the Firm Capacity Certificates to be issued, it may open a Market Incident (Firm Capacity) investigation. The results of such investigation will be compiled in a dedicated report, which will be submitted to the Authority, in order the Authority takes the actions it considers appropriate, including the application of penalties.
- 9.1.3.7 The number of Initial Firm Capacity Certificates issued for a Generation Unit or Generation Plant could be modified, issuing new ones or cancelling some of them, depending on the actual performance of the Generation Unit or Generation Plant. This modification could be initiated either by the Market Operator or upon request of the involved Market Participant.
- 9.1.3.8 The number of Initial Firm Capacity Certificates issued for a Trader or Supplier with Import Contracts could be reduced, cancelling some of them, depending on information provided by the System Operator in relation with the Energy or Capacity available for Import during critical periods of the system. This modification shall be initiated by the Market Operator upon information provided by the System Operator.
- 9.1.3.9 Two months before the date at which the Firm Capacity Certificates expire, the involved Market Participant, shall request the Market Operator to renew it and/or to issue new certificates. The procedure for this renewal will be the same as in the case of the Initial Firm Capacity Certificates.
- 9.1.3.10 The Market Operator shall develop an Operational Procedure detailing the necessary information and the process to be followed for issuing the certificates. Such process and necessary information, including templates for the “Request for Firm Capacity Certification” will be published on the website of the Market Operator.

#### 9.1.4 REGISTRATION OF THE ISSUED CERTIFICATES

- 9.1.4.1 The Market Operator shall create and maintain permanently updated a Firm Capacity Register, for all certificates issued, with at least the following information:
  - a. Unique, non-duplicated, number of the Firm Capacity Certificate;
  - b. Name of the Market Participant for which the Firm Capacity Certificate was issued;
  - c. Name of the Market Participant currently owning the Firm Capacity Certificate;
  - d. Identification Code of the Generation Unit or Import Contract associated with the Firm Capacity Certificate;
  - e. Status of Firm Capacity Certificate. The Firm Capacity Certificate status are:
    - i. **Available:** The Firm Capacity Certificate is valid, and it can be bought and sold to back any Capacity transaction the owner wishes to perform;

- ii. **Blocked:** The Firm Capacity Certificate is valid, but it cannot be used for backing Capacity transactions of the owner;
- iii. **Cancelled:** The Firm Capacity Certificate is no longer valid.
- f. Date of issuing the Firm Capacity Certificate; and
- g. Date of certification expiration.

9.1.4.2 The Firm Capacity Register shall be published in the Market Operator web page.

## 9.2 DETERMINATION OF INITIAL FIRM CAPACITY

### 9.2.1 COMMISSIONED GENERATION UNITS OR GENERATION PLANTS

9.2.1.1 The Initial Firm Capacity, for Dispatchable Generation Units, already commissioned at CMOD, shall be determined by the Market Operator based on the actual availability of the Generation Unit, during System Peak Hours, in the three previous years.

9.2.1.2 The Initial Firm Capacity, for Non-Dispatchable Generation Unit, already commissioned at CMOD, shall be determined as the average hourly production of the Generation Unit, at System Peak Hours, of the previous three years. The Energy generated during periods in which the Non-Dispatchable Generation Unit has been instructed by the System Operator or the Distribution Licensee, as the case may be, to reduce its production due to network or system problems or Congestion, shall be excluded from the calculation.

9.2.1.3 The Market Operator shall develop an Operational Procedure detailing the calculations to be performed to determine the Initial Firm Capacity of dispatchable and Non-dispatchable Generation Units, as well as the necessary information and the institutions involved in providing such information.

### 9.2.2 NEW GENERATION UNITS

9.2.2.1 The Initial Firm Capacity of new Generation Units, which have not been commissioned at CMOD, will be calculated by the Market Operator based on the technology utilized by the Generation Unit, multiplying the Installed Capacity by the Equivalent Availability Factors indicated in Table I.

**Table I: Equivalent Availability Factors**

Generation Technology	Equivalent Availability Factor
Hydro with reservoir	0.85
Hydro run of river	
Thermal (either liquid fuels, gas or coal fired)	0.85
Bagasse	0.85
Wind	0.30
Solar PV	0.22
Thermal Solar	0.8
Wind or solar with batteries	0.85

9.2.2.2 The Initial Firm Capacity Certificate of new Generation Units will have a validity of [3] three years.

### 9.2.3 NASCENT OR SPECIAL TECHNOLOGIES

9.2.3.1 The Initial Firm Capacity of new Generation Units, which have not been commissioned at CMOD and use nascent or special technologies which are not included in Table I, shall be determined in a case-by-case basis.

9.2.3.2 The Market Operator will review the provided documentation and, if it is deemed appropriate, it will seek advice from reputable experts with specific experience in the proposed technologies.

9.2.3.3 Based on such analysis and the advice received, the Market Operator will propose the values which will be included in the Initial Firm Capacity Certificate. These values will be reviewed after [3] years of the COD.

## 9.3 REVIEW OF FIRM CAPACITY CERTIFICATION

### 9.3.1 REVIEW INITIATED BY THE MARKET OPERATOR

9.3.1.1 The Market Operator is entitled to cancel certain amount of the issued Firm Capacity Certificates, in cases:

- a. The actual availability of a Dispatchable Generation Unit is consistently below the values which were used to issue the certificates; or
- b. The actual Energy produced by a Non-dispatchable Generation Unit is consistently lower than the values which were used to issue the certificates; or
- c. The Energy and/or Capacity in an Import Contract that should be available for dispatch has not been available when required.

9.3.1.2 This review can only be performed:

- a. After the third year of the date of issuing the initial or renewed Firm Capacity Certificates; and
- b. Not more than once during the validity of the certificates.

9.3.1.3 In case the Market Operator considers appropriate to reduce the number of Firm Capacity Certificates previously issued, it will inform the situation to the involved Market Participant explaining the reasons for such reduction, and requesting to receive the allegations the parties consider suitable. Once received and revised such allegations, the Market Operator will take the decision to review or not the initial or renewed certification and it will inform the involved Market Participant accordingly.

9.3.1.4 In case the Market Operator decides to reduce the number of Firm Capacity Certificates already issued, it will proceed to change the Status of a certain number of such certificates to "Cancelled". The number of certificates which will be cancelled shall be calculated as the difference between the initial or renewed issued certificates and the new value decided multiplied by ten [10]. A Cancelled Firm Capacity Certificate will not change its Status in any circumstance.

- 9.3.1.5 The Market Operator shall develop an Operational Procedure detailing the criteria which will be used to measure the actual performance of a Generator or Import Contract, clearly determining the cases in which this review would be performed and how it will be conducted.

### 9.3.2 REVIEW OF FIRM CAPACITY CERTIFICATE REQUESTED BY A MARKET PARTICIPANT

- 9.3.2.1 Requests for review of Firm Capacity Certification for Import Contracts will only be allowed in case the contract is univocally associated to a Generator or Power Plant located in Azad Jammu & Kashmir, Gilgit Baltistan and territories where the applicability of the Act is not extended. In these cases the Import Contract will be considered as an equivalent Generation Unit.

- 9.3.2.2 The involved Market Participant may request modification of the number of the Firm Capacity Certificates, previously issued, in following cases:

- a. After a modification or major overhaul is performed in a Generation Unit or a Generation Plant, which ends up with larger values of the Installed Capacity; or
- b. After an overhaul is performed in a Generation Unit, which properly solve the causes which led to a reduction on the Firm Capacity Certificates issued, initiated by the Market Operator; or
- c. If, for any other reason, the involved Market Participant considers that the values indicated in the existing Firm Capacity Certification for a Generation Unit do not properly reflect the characteristics of the involved equipment. In this case, the claim shall be supported by appropriate evidence including information from at least the last two years in which the Equivalent Availability Factor or the Energy actually generated, as the case may be, is significantly above the values utilized to issue the existing Firm Capacity Certificates.

- 9.3.2.3 In order to be allowed to request a modification, of the number of Firm Capacity Certificates issued, the Generation Unit:

- a. Should have been dispatched, at least, 1,500 hours in each of the previous two years; and
- b. The Energy generated by the Generation Unit in each of the previous two years is above the Generation Unit Installed Capacity multiplied by 1,200 hours.

- 9.3.2.4 In those cases, the involved Market Participant shall submit a request for Firm Capacity modification of the Generation Unit, along with the studies or evidences it considers appropriate to support the request for modification.

- 9.3.2.5 The Market Operator will:

- a. Conduct the analysis and investigations it considers appropriate, which may include:
  - Comprehensive review of the submitted documentation;
  - Request the opinion of an independent expert, which will provide advice about the specific case and/or the submitted documentation;
  - Perform or instruct tests or verifications on the involved Generation Unit; and/or
  - Request a verification period, which should not last more than [180 days], during which the values claimed by the Generator shall be actually achieved.

- b. After the evaluation of the request submitted by the involved Market Participant, determine the revised parameters which shall be used to issue the Firm Capacity Certificates of the involved Generation Unit.
- 9.3.2.6 This review can only be performed:
- a. After the third year of the date of issuing the Initial or Renewed Firm Capacity Certificates in the case the values claimed are above those stated in Table I.
  - b. Not more than once during the validity of the certificate.
- 9.3.2.7 The duration of the new Firm Capacity Certificates issued shall be up to the same date stated in the Initial or Renewed Firm Capacity Certificates.
- 9.3.2.8 The Market Operator shall develop an Operational Procedure indicating the criteria that will be used to accept or deny the request of the Market Participants.

### 9.3.3 APPEAL TO THE AUTHORITY

- 9.3.3.1 In cases the involved Market Participant disagrees with the decision taken by the Market Operator, in relation with the amount of Firm Capacity Certificates issued, it may appeal such decision to the Authority.
- 9.3.3.2 Up to the moment the Authority takes a final decision, the Firm Capacity Certificates issued by the Market Operator will be considered valid.

### 9.3.4 ACTIONS AFTER FIRM CAPACITY CERTIFICATION MODIFICATION

- 9.3.4.1 In those cases, in which the number of Firm Capacity Certificates are above the originally issued ones, the Generator will be allowed to sign and register contracts utilizing the new Firm Capacity Certificates issued.
- 9.3.4.2 In those cases, in which the number of Firm Capacity Certificates is reduced, and the remaining certificates are below the total Capacity sold by this Generator, as per the contracts included in the Market Operator Contract Register, the Generator shall agree new amended contracts with the involved Market Participants or procure the necessary additional certificates through Contracts with other Market Participants, in which case no amendments to the existing contracts are required.
- 9.3.4.3 The aggregated Capacity sold in the amended contracts shall not exceed the number of the Firm Capacity Certificates issued. The amended contracts signed between the involved Market Participant and other Market Participants, shall be registered with the Market Operator, following the standard procedures established in this Code.
- 9.3.4.4 The Market Operator shall develop an Operational Procedure indicating the processes to be followed in these cases.

## 9.4 DETERMINATION OF THE FIRM CAPACITY AT CERTIFICATES RENEWAL

- 9.4.1.1 The procedures to be followed in case of renewal of the Firm Capacity Certificates will be the same utilized to issue the Initial Firm Capacity Certificates for existing Generation Units.

- 9.4.1.2 The period to be included in the calculations shall be the three years before the date of the renewal request.

## **9.5 ISSUING OF FIRM CAPACITY CERTIFICATES**

- 9.5.1.1 The Market Operator will issue the Firm Capacity Certificates, by registering them in the Firm Capacity Register. The number of Firm Capacity Certificates issued shall be calculated as the Firm Capacity certified during the certification process multiplied by 10.
- 9.5.1.2 The Market Operator will issue two different types of Firm Capacity Certificates: Temporary Firm Capacity Certificates and Permanent Firm Capacity Certificates.
- 9.5.1.3 Temporary Certificates are Firm Capacity Certificates which may be issued at a request of a Generator, for a new facility during the construction period. Such request can be made before the expected commercial operating date. These certificates will have validity of decided by the Market Operator on a case to case basis and will expire on the commercial operation date of the involved Generation Plant.
- 9.5.1.4 Permanent Certificates shall have a validity of minimum three [3] years and a maximum of [5] years.
- 9.5.1.5 Generators owning a Temporary Firm Capacity Certificate can use them for promotional or commercial purposes and, if it corresponds, for ex-ante verification of Capacity Obligations, but they cannot be used to support bilateral agreements which have to be registered with the Market Operator.
- 9.5.1.6 The owners of a Temporary Firm Capacity Certificate shall request the Market Operator its cancellation and issuing of a Permanent Certificate not earlier than two months of the expected commercial operating date. The procedure for requesting this change will be detailed in the corresponding operational procedure.

## 10. BALANCING MECHANISM FOR CAPACITY

### 10.1 INTRODUCTION

#### 10.1.1 PURPOSE

10.1.1.1 The purpose of the Balancing Mechanism for Capacity is to facilitate compliance with the Capacity Obligations of Suppliers, or other Market Participants which have Capacity Obligations, allowing Capacity transactions between Market Participants which require additional Capacity to comply with its obligations to purchase it from Market Participants which have Capacity in excess of its obligations.

#### 10.1.2 BALANCING PERIOD

10.1.2.1 The Balancing Mechanism for Capacity will determine, for each Market Participant, the Capacity Imbalances as the differences between:

- a. The Capacity taken from the Transmission or Distribution Network, as it corresponds, and the Capacity Credited to such Market Participant due to the Contracts, registered with the Market Operator or Generation it owns; and
- b. The Guaranteed Capacity sold by a Generator through Contracts registered with the Market Operator and the Capacity actually provided by such Generator during the Balancing Period.

10.1.2.2 The Market Operator shall calculate the Imbalances of Capacity on yearly basis (the Capacity Balancing Period), using for such purpose certain number of hours in which the system is stressed. Amounts Payable and Amounts Receivable will be determined based on these imbalances pursuant the formulations established in this Chapter of the Market Commercial Code.

10.1.2.3 The results of the Balancing Mechanism for Capacity will also be used to verify ex-post compliance of the Capacity Obligations of each Market Participant.

#### 10.1.3 SELLERS AND PURCHASERS IN THE BALANCING MECHANISM FOR CAPACITY

10.1.3.1 Following Market Participants will, eventually, be sellers in the Balancing Mechanism for Capacity:

- a. Generators which have part or all its Available Capacity not compromised through Contracts registered with the Market Operator;
- b. Traders, Suppliers or BPCs which have contracted Capacity in excess of the requirements established in this Chapter of the Market Commercial Code;

10.1.3.2 Following Market Participants will be purchasers in the Balancing Mechanism for Capacity:

- a. Generators which have sold Guaranteed Capacity, as defined in Clause **Error! Reference source not found.** to other Market Participants, in the cases that the Capacity actually provided, is not enough to cover its contractual obligations;
- b. Traders, Suppliers or BPCs for which the Capacity actually demanded is higher than the Capacity Credited to such Market Participant.



## **10.2 PROCEDURES FOR RUNNING THE BALANCING MECHANISM FOR CAPACITY**

10.2.1.1 The Market Operator shall use the procedure established in this Section of the Market Commercial Code for running the Balancing Mechanism for Capacity.

### **10.2.2 STEP I: IDENTIFICATION OF CRITICAL HOURS**

10.2.2.1 For balancing purposes, the Capacity actually provided by Generators and Capacity taken by the Demand will be calculated for the “Critical Hours. The critical hours are those hours of the previous year, in which the power system is at maximum stress.

10.2.2.2 Within twelve [12] months from the issuing of this Code, the System Operator will develop, and submit to the Authority for approval, a Commercial Code Operational Procedure for determining the Critical Hours of the previous Fiscal Year. Such CCOP shall take into consideration:

- a. The characteristics of the Demand;
- b. The production of Energy by certain technologies, which, due their characteristics, are not be able to fully control their injections into the grid;
- c. The specific characteristics of the constraints associated with hydraulic Generation;
- d. The Generation Units maintenance plans; and
- e. The minimum regulation requirements of the power system.

10.2.2.3 Until the System Operator develops the CCOP indicated in Clause 10.2.2.2, and it will be approved by the Authority, the Critical Hours will be defined as:

- a. The fifty (50) hours in which the addition of the Total Demand and the Demand which has been disconnected due to instructions issued by the Market Operator is higher;
- b. Provided that no more than five (5) hours of the same day can form part of the Critical Hours.

### **10.2.3 DETERMINATION OF THE CAPACITY PROVIDED BY GENERATORS**

10.2.3.1 The amount of Capacity provided by each Generation Unit, for the Balancing Mechanism for Capacity (expressed in MW-year), will correspond to the average Capacity actually provided by such Generator to the system during the Critical Hours.

10.2.3.2 The Capacity provided by a Generation Unit, at each hour belonging to the Critical Hours, shall be determined by the System Operator taking due consideration of the type of Generation Unit involved:

- a. For ARE Generation Units, without storage, which production is dependent on the availability of the primary energy resource (Variable Renewable Energy Generation Units), the Capacity provided will be equal to:
  - i. The Energy generated by such Generation Unit during the hour; plus

- ii. The Energy that such Generation Unit had been capable to produce during the hour considered, in case the System Operator has issued an instruction to disconnect or reduce power, as it corresponds, to such Generation Unit, due to Congestion or for allowing the provision of Ancillary Services by other Generation Units. The System Operator shall estimate such generation as the Energy that was produced by the involved Generation Unit immediately before of issuing such instruction.
- b. For non-Energy Limited Generation Units, the Capacity provided will be equal to the Available Capacity of the Generation Unit during the hour, notified by the involved Generator to the System Operator, pursuant the prescriptions established in the Grid Code;
- c. For Energy Limited Generation Units, the Capacity provided during the hour shall be calculated differently depending on the amount of primary energy stored:
  - i. In case the primary energy stored at the considered hour would be enough for operating the Generation Plant at its Installed Capacity for at least ninety-six (96 hours), the Generation Unit shall be considered as a non-Energy Limited Generation Unit and the Capacity Provided shall be calculated as per paragraph b) above.
  - ii. In case the primary energy stored at the considered hour would not be enough for operating the Generation Plant at its Installed Capacity for at least ninety-six (96 hours), the Capacity provided by the Generation Unit shall be equal to the Energy instructed to be Generated by such Generation Unit by the System Operator, during hour.
- d. For Imports the Capacity provided shall be equal to the determined by the System Operator taking due consideration of the nature of the involved Contract, which shall not be lower than the actual Import during the corresponding hour.

10.2.3.3 The System Operator shall develop a Commercial Code Operational Procedure, indicating the detailed methodology for implementing the calculations indicated in Clause 10.2.3.2. Such methodology shall take due consideration of:

- a. Generation Units maintenance plans and eventual modifications of such plan, instructed by the System Operator;
- b. Availability declarations of each Generation Plant or Generation Unit, as it corresponds, and eventual changes to such declarations informed by the Generator during real time operations;
- c. The results of tests performed or instructed by the System Operator to verify the Availability declarations notified by the Generators, including compliance with instructions of start-up, synchronizing and production of Energy;
- d. The results of audits, performed by the System Operator, aimed to verify the appropriateness of the Availability declarations issued by the Generator.

10.2.3.4 The Capacity provided by each Generation Unit at each hour belonging to the Critical Hours, shall be determined by the System Operator within fifteen (15) Business Days immediately after the end of each Calendar Year. The System Operator will communicate to the Market Operator the results of such determination.

#### 10.2.4 STEP 3: CAPACITY REQUIREMENTS BY THE DEMAND

- 10.2.4.1 The annual Capacity requirements by the demand, that is the amount of power that each Market Participant serving load is obligated to obtain for each year in which it has carried out operations in the CTBCM, will be calculated by the Market Operator according to the following formula:

$$ACR = PD * (1 + P_L) * (1 + RM)$$

Where:

*ACR* is the Annual Capacity Requirement of the particular demand (BPC or group of loads);

*PD* is the average Peak Demand by a particular demand, referred to the Transmission Network, during the “critical hours” registered by the Commercial Metering System;

*P<sub>L</sub>* are the average losses in the Transmission Network; and

*RM* is the Minimum Planning Reserve.

- 10.2.4.2 The Minimum Planning Reserve for the Pakistani system will be calculated by the Planner and submitted to the Authority for approval. The Minimum Planning Reserve shall be expressed as a percentage of the whole system demand and it will be the minimum reserve required to:
- Assure secure operation of the system at all times (operational reserve); plus
  - The minimum amount of reserve required to comply with the limits established in the Grid Code.
- 10.2.4.3 The Planner in the Indicative Generation Capacity Expansion Plan will propose the values to be used for the second item.

#### 10.2.5 CAPACITY BALANCES OF EACH MARKET PARTICIPANT

- 10.2.5.1 The Market Operator will calculate the Capacity Balance of each Market Participant using:
- The information provided by the System Operator in relation with the Capacity Credited of generators and the Annual Power Requirements of the demand, and
  - The information included in the registered contracts.
- 10.2.5.2 The Capacity Balance of each Market Participant will be determined as the difference between the credited Capacity and the power requirements taking into account the Capacity purchased or sold through bilateral contracts with other Market Participants. It will be calculated as:

$$CB_i = AAC_i - ACR_i + CP_i - CS_i$$

Where:

*CB<sub>i</sub>* is the Capacity Balance of Market Participant *i*

*AAC<sub>i</sub>* is the Actual Available Capacity of Market Participant *i*

*ACR<sub>i</sub>* is the Annual Capacity Requirement of Market Participant *i*

$CP_i$  is the Capacity purchased by Market Participant  $i$  from other market participants through bilateral contracts, which have been registered with the Market Operator.

$CS_i$  is the Capacity sold by Market Participant  $i$  to other market participants through bilateral contracts, which have been registered with the Market Operator.

- 10.2.5.3 For appropriate delimitation of Capacity responsibilities, all the contracts registered with the Market Operator, regardless of their type, should clearly indicate the Capacity that it is purchased and sold and the entity which will be responsible for the Capacity balance.

## 10.2.6 DETERMINATION OF THE REFERENCE TECHNOLOGY

- 10.2.6.1 The price of the Capacity will be determined by the estimating the cost of the most economic generation unit capable to provide 1 MW of Capacity (and associated Energy), only for the determined “critical hours”.

- 10.2.6.2 This Capacity cost (expressed in PKR/MW.year), corresponding to the most appropriate technology (least cost technology), will be calculated by the Planner yearly, utilizing the information provided by NTDC in the latest approved Integrated Generation Capacity Expansion Plan. For such purpose it will consider different generation technologies, determining for each of them the levelized investment cost and the revenues that this project would obtain during the Critical Hours if it had been operating in the market.

- 10.2.6.3 Estimated project investment cost.

- a. The costs of the project may include, among other inputs:
  - i. Equipment costs;
  - ii. Site acquisition costs (land);
  - iii. Engineering, procurement, project management and construction costs;
  - iv. Legal costs;
  - v. Interconnection costs of the Transmission network;
  - vi. Construction costs and interconnection of fuel pipelines, if applicable; and
  - vii. Mobilization and contingent costs.
- b. Estimated financial costs of the project.
- c. The assumed economic operating life of the Reference Generation Technology, considering the salvage value after that operational life.
- d. An appropriate discount rate, which shall be prescribed by the Authority.

- 10.2.6.4 Estimated Revenues will be calculated by comparing the system marginal prices at the determined Critical Hours and the variable cost of the technologies evaluated.

10.2.6.5 The levelized fixed cost of the technologies evaluated will be calculated as:

$$LFT = LIC - RevMarket$$

Where:

*LFT* is the levelized fixed cost of the technology being evaluated;

*LIC* is the levelized investment cost; and

*RevMarket* are the simulated revenues this technology would have obtained in the Energy market.

10.2.6.6 The reference technology will be that of lower levelized fixed costs.

## 10.2.7 DETERMINATION OF THE CAPACITY PRICE

10.2.7.1 The Market Operator will determine the price for the Capacity balancing mechanism making use of two curves: A supply curve and a demand curve (see Figure 1).

- a. The supply curve: The amount of Capacity “offered” will be sum of the Capacity balances of all Market Participants with a positive balance value (Capacity surplus). This Capacity is considered offered in the balancing mechanism as a price taker.
- b. The demand curve: The demand curve will have two sections. The mandatory part and the efficient part.

10.2.7.2 The “mandatory” section will start at point A, which corresponds to a Capacity of zero and a price equal to two times the levelized fixed costs of the reference technology, and extends horizontally to point B, which corresponds to the sum of the Capacity balances of all Market Participants with a negative balance value (Capacity deficit).

10.2.7.3 The “efficient” section will start at point B and it will extend to point C. This point will be determined by the intersection of the levelized fixed cost of the reference technology and the “efficient” demand level.

10.2.7.4 The “efficient” demand level is the amount of power that the system should have installed, in the long range, to achieve the optimum level of reserves. The optimum level of reserves for the Pakistani system will be calculated in the IGCEP and it should be approved by NEPRA. This value will be calculated as:

$$EDL = \sum CB_{i-ve} * \frac{1 + RE}{1 + RM}$$

Where:

*EDL* is the efficient demand level (Point C)

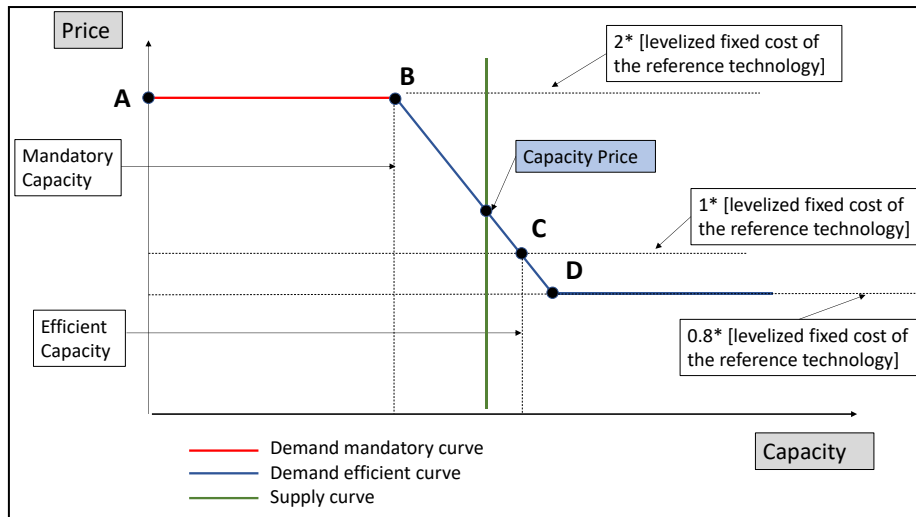
*CB<sub>i-ve</sub>* is the total amount of Capacity required by the Market Participants with negative values of balance (Capacity deficits)

*RE* is the efficient level of reserve

*RM* is the minimum level of reserve, determined as indicated above

10.2.7.5 The “efficient” section of the demand curve will extend, with the same slope, up to point D, which corresponds to 80% of the levelized fixed costs of the reference technology. The Capacity prices will be capped at such level.

**Figure I: Demand and Supply Curves for the Capacity Balancing Mechanism**



10.2.7.6 The Capacity price, which will be used in the Capacity Balancing Mechanism will be the intersection of the demand and supply curves.

10.2.7.7 At least 21 days before the execution of the Capacity Balancing Mechanism, the Market Operator will notify to each Market Participant:

- a. The total amount of Annual Power Credited;
- b. The Annual Power Requirement;
- c. The Capacity purchased and sold by such Market Participant, according with the contracts registered;
- d. Its Capacity Balance;
- e. The Capacity Price (PKR/MW.year)
- f. The net position of the Market Participant

### 10.3 DETERMINATION OF THE RECEIVABLE AND PAYABLE AMOUNTS

#### 10.3.1 EXECUTION OF THE BALANCING MECHANISM FOR CAPACITY

10.3.1.1 Each Market Participant shall be responsible to provide to the Market Operator appropriate guarantees to cover its expected position in the Balancing Mechanism for Capacity.

10.3.1.2 On the prescribed date, the Market Operator will settle the balancing position of each Market Participant in the following way:

- a. If the total amount of Capacity offered is equal or higher than the total amount of Capacity demanded (total Capacity required by Market Participants with negative balance values) then:

- i. Each Market Participant with negative balance Capacity will pay its balance multiplied by the Capacity price.
  - ii. The total amount collected will be distributed among all Market Participants with positive balance a pro-rata basis.
- b. If the total amount of Capacity offered is lower than the total amount of Capacity demanded (total Capacity required by Market Participants with negative balance values) then:
  - i. The total offered Capacity will be shared among the Market Participants with negative Capacity balance in pro-rata basis.
  - ii. The amount collected will be distributed among all Market Participants with positive balance a pro-rata basis.
  - iii. The Market Participants which have not been able to obtain the Capacity required will be considered as non-compliant with its Capacity Obligations in the CTBCM. This situation will be communicated to NEPRA which can impose penalties to such Market Participants.

### 10.3.2 PUBLICATIONS OF BMC RESULTS

- 10.3.2.1 The Market Operator shall document and publish, in its website, the results of the BMC calculations, immediately after it closes.
- 10.3.2.2 The information the Market Operator shall make publicly available in its web page, includes:
  - a. The Capacity Price, for the previous year;
  - b. The amounts payable and receivable of each Market Participant; and
  - c. Any comment or remark the Market Operator deems suitable for proper understanding of the published results.

# II. COMPLIANCE WITH CAPACITY OBLIGATIONS

## II.1 CAPACITY OBLIGATIONS OF MARKET PARTICIPANTS

### II.1.1 OBLIGATIONS OF CONTRACTING CAPACITY

II.1.1.1 All Market Participants which supply to Consumers, BPCs which are registered as Market Participants and, if it corresponds, Firm Exports, shall have, or have contracted, enough Generation Capacity, for the current and subsequent years, to cover a percentage of its forecasted demand as per the regulations issued by the Authority and the obligations stated in this Code.

## II.2 DEMAND FORECASTS

### II.2.1 SUBMISSION OF DEMAND FORECASTS

II.2.1.1 Every fiscal year, before [July 31<sup>st</sup>] the Market Operator will request the Market Participants indicated in Clause II.1.1.1, to submit their updated demand forecasts covering a period of:

- a. Base Suppliers: Current year and following [6] years;
- b. Competitive Suppliers: Current year and following [3] years; and
- c. BPCs registered as Market Participants: Current year and following [2] years
- d. Firm Exports: Current year and following [3] years

II.2.1.2 The demand forecasts, of each involved Market Participant shall include, for each year, at least:

- a. The total amount of Energy to be supplied;
- b. The expected yearly Maximum Demand, indicating the month in which this Maximum Demand is expected to be produced; and
- c. The expected maximum demand to be supplied at System Peak Hours.

II.2.1.3 The involved Market Participants shall provide the requested information before [August 31<sup>th</sup>] of each year.

II.2.1.4 The Market Operator shall develop an Operational Procedure with appropriate templates for the submission of the requested information.

### II.2.2 DEMAND FORECAST OF BASE SUPPLIERS

II.2.2.1 The Demand Forecast submitted by the Base Supplier shall be developed using appropriate models or algorithms and taking into account the latest available information. Particularly, the forecasts shall take into consideration:

- a. The demand of their current customers;
- b. The evolution of the expected number of customers and their associated demand;
- c. Notice received from BPCs informing to end the contracted supply and their intention to contract such supply from Competitive Suppliers;



- d. Reasoned estimations regarding the number of BPCs, and the associated demand, which may end the supply contracted with the Base Supplier to receive such supply from Competitive Suppliers;
  - e. Reasoned estimations regarding the number of BPCs, and the associated demand, which may end the supply contracted with Competitive Suppliers, which may return to receive such supply from the Base Supplier;
  - f. The effect of eventual losses reduction plans conducted by the associated distribution Licensee;
  - g. The effect of plans, developed either by the Base Supplier or its associated distribution Licensee, aimed to reduce consumption at the peaks;
  - h. Any other factor which could be considered important.
- 11.2.2.2 The Demand Forecast submitted by the Base Supplier shall be based on the demand forecast submitted to the Authority by the involved Base Supplier and approved by the Authority in the latest approved Procurement Plan, as per the applicable regulations.
- 11.2.2.3 The Market Operator will compare the demand forecast submitted by a Base Supplier with the demand forecast included in the latest Procurement Plan approved by the Authority. In the cases in which both forecasts are materially different, the Market Operator will inform about this to the Authority, for the Authority take the actions it considers appropriate.

### 11.2.3 DEMAND FORECAST OF COMPETITIVE SUPPLIERS

- 11.2.3.1 The demand forecast of Competitive Suppliers shall include:
- a. The demand of all those customers which have valid contracts with the Competitive Supplier, which have been registered with the Market Operator or are in the process to be registered; plus
  - b. Valid contracts or irrevocable letter of commitments with customers which will become effective at a later date and, for such reason, may have not been registered with the Market Operator at the moment of submitting the forecast.
- For the avoidance of doubt, the demand of BPCs which has formally notified the Distribution Licensee or its associated Base Supplier, as the case may be, the intention to contract its supply with the Competitive Supplier shall be included in this projection.
- 11.2.3.2 The information contained in the Competitive Supplier forecast shall include information only up to the date in which the registered contract or irrevocable letter of commitment expires. For subsequent periods, in this forecast, it shall be assumed that the involved BPC ceases to be supplied from the Competitive Supplier.
- 11.2.3.3 In those cases, in which the contract or irrevocable letter of commitment do not have a certain expiration date, it shall be considered that the contract or irrevocable letter of intent will last for all the reported period, and the involved demand shall be reported in the Competitive Supplier forecast.

## 11.2.4 DEMAND FORECAST OF BPCS

- 11.2.4.1 BPCs which are registered as Market Participant shall submit to the Market Operator its demand forecast for all the periods in which it has contracts registered with the Market Operator, for Energy and/or Capacity with Competitive Suppliers and/or other Market Participants.
- 11.2.4.2 For those periods after the expiration of the contracts registered with the Market Operator, the BPC shall indicate:
- Its best estimation on the Energy and peak demand to be consumed, in the cases the BPCs intention is to continue being registered as a Market Participant; or
  - Zero [0.] if the BPC considers that, after the expiration of the contracts registered with the Market Operator, it will withdraw as Market Participant and it return to obtain its supply from the Base Supplier

## 11.2.5 REVIEW OF THE DEMAND FORECASTS

- 11.2.5.1 The Market Operator will review the submitted information and it will assess its appropriateness making the test and checks it deems appropriate. In case the Market Operator considers it necessary, it will request confirmation and/or clarifications of the provided information. The involved entity shall have fifteen [15] calendar days to answer the request issued by the Market Operator.
- 11.2.5.2 The Market Operator will utilize the values submitted by the involved entities, either those originally submitted or the corrected ones as per application of clause 11.2.5.1, for assessing compliance with the Capacity Obligations.
- 11.2.5.3 In case the Market Operator, in its reasonable opinion, considers that the received information may be false or misleading, especially in those cases in which the submitted information may have material impacts in the compliance or not with the Capacity Obligations, it may open a Market Incident (Demand Forecast) investigation. The results of such investigation will be compiled in a dedicated report, which will be submitted to the Authority, in order the Authority takes the actions it considers appropriate, including the application of penalties.
- 11.2.5.4 The Market Operator shall develop an Operational Procedure with appropriate templates for the submission of the requested information and details about the checks to be made on the submitted information.

## 11.3 CAPACITY OBLIGATIONS

### 11.3.1 CAPACITY OBLIGATIONS OF BASE SUPPLIERS

- 11.3.1.1 The Capacity Obligations of the Base Suppliers, for each period in which this obligation shall be verified by the Market Operator, shall be calculated as:

$$CO_{BSi,p} = MD_{PH,i,p} * \frac{OB\%_{BS,p}}{100}.$$

Where:

- $CO_{BSi,p}$  is the Capacity Obligation of the Base Supplier “i” in the period “p” which will be verified by the Market Operator as indicated in Section 11.4 of this Code.

- $MD_{PH,i,p}$  is the Maximum Demand at System Peak Hours of the Base Supplier “i” in the period “p”. The value of  $MD_{PH,i,p}$  will be The forecasted Maximum Demand at System Peak Hours, submitted by the involved Base Supplier to the Market Operator, as per the requirements stated in Section 11.2, for the current fiscal year and all periods immediately after.
- $OB\%_{BS,p}$  is the Capacity Obligation Percentage, applicable to Base Suppliers, corresponding to period “p” as it will be established by the Authority from time to time.

11.3.1.2 Until the moment the Authority establishes new values for the Capacity Obligation Percentage the values contained in Section “19 – Transitory Provisions” will apply.

### 11.3.2 CAPACITY OBLIGATIONS OF COMPETITIVE SUPPLIERS

11.3.2.1 The Capacity Obligation of the Competitive Suppliers, for each period in which this obligation shall be verified by the Market Operator, shall be calculated as:

$$MCO_{CSj,p} = MD_{PH,j,p} * OB\%_{CS,p} / 100.$$

Where:

- $MCO_{CSj,p}$  is the mandatory Capacity obligation, of the Competitive Supplier “j” in the period “p” which will be verified by the Market Operator as indicated in Sections 11.4 of this Code.
- $MD_{PH,j,p}$  is the Maximum Demand at System Peak Hours of the Competitive Supplier “j” in the period “p”. The value of  $MD_{PH,j,p}$  will be the forecasted Maximum Demand at System Peak Hours, corresponding to the Contracted Supply, submitted by the involved Competitive Supplier to the Market Operator, as per the requirements stated in Section 11.2, for the current fiscal year and all periods immediately after:
- $OB\%_{CS,p}$  is the Capacity Obligation Percentage, applicable to Competitive Suppliers, corresponding to period “p” as it will be established by the Authority from time to time.

11.3.2.2 Until the moment the Authority establishes new values for the Capacity Obligation Percentage the values contained in Section “19 – Transitory Provisions” will apply.

### 11.3.3 CAPACITY OBLIGATIONS OF BPCS REGISTERED AS MARKET PARTICIPANTS

11.3.3.1 The Capacity Obligation of the BPC registered as Market Participant, for each period in which this obligation shall be verified by the Market Operator, shall be calculated as:

$$CO_{BPCk,p} = MD_{PH,k,p} * OB\%_{BPC,p} / 100.$$

Where:

- $CO_{BPCk,p}$  is the Capacity obligation, of the BPC registered as Market Participant “k” in the period “p” which will be verified by the Market Operator as indicated in Section 11.4 of this Code.
- $MD_{PH,k,p}$  is the Maximum Demand at System Peak Hours of the BPC registered as Market Participant “k” in the period “p”. The value of  $MD_{PH,k,p}$  will be the

forecasted Maximum Demand at System Peak Hours, corresponding to the Contracted Supply, submitted by the involved BPC to the Market Operator, as per the requirements stated in Section 11.2, for the current fiscal year and all periods immediately after.

- $OB\%_{BPC,p}$  is the Capacity Obligation Percentage, applicable to BPCs registered as Market Participants, corresponding to period “p” as it will be established by the Authority from time to time.

11.3.3.2 Until the moment the Authority establishes new values for the Capacity Obligation Percentage the values contained in Section “19 – Transitory Provisions” will apply.

## 11.4 EX-ANTE VERIFICATION OF CAPACITY OBLIGATIONS (CURRENT AND SUBSEQUENT YEARS)

### 11.4.1 GENERAL

11.4.1.1 Every year, the Market Operator shall verify the compliance with the Capacity Obligations of Market Participants which supply to Consumers and BPCs which are registered as Market Participants, for the current and following years, within one [1] month after the end of the previous fiscal year. The number of years to be verified shall be those with consistent with the submitted Demand Forecasts, as per Sub-section 11.2.1

11.4.1.2 The Market Operator will communicate the preliminary results of the verification to each involved Market Participants, giving them at least ten [10] business days to formulate allegations, in case it considers the calculations or interpretations contains errors or inaccuracies.

11.4.1.3 The Market Operator shall review the presented allegations, accepting or rejecting them as it considers appropriate, and, based on that, it will perform the final calculations and verifications.

### 11.4.2 INFORMATION REQUIRED FROM MARKET PARTICIPANTS

11.4.2.1 At the end of each fiscal year, before [July 31st], the Market Operator will request to the Market Participants which supply to Consumers and BPCs which are registered as Market Participants, to submit, if they consider it pertinent, information regarding Generation projects, planned or under construction, which the involved Market Participant or BPC considers should be taken into account for determining the Capacity allocated to such Market Participant.

11.4.2.2 The Market Participant or BPC which have been requested such information will submit it, attaching a formal request to the Market Operator for such projects to be considered as eligible for assessing compliance with the Capacity Obligations. The request shall be supported by appropriate evidence of the project firmness, including one or more of the following documents:

- a. For projects being developed by the Market Participants which supply to Consumers and BPCs which are registered as Market Participants
  - Generation License issued by the Authority or a formal petition to the Authority for issuing such Generation License, in cases the issued regulation prescribes this licence is required;

- Temporary Firm Capacity Certificate issued by the Market Operator or documents showing its request, in cases the project is expected to be completed in the following twelve [12] months;
- Documentation proving the acquisition or rental of the land in which the project is being (or will be) developed and the lines which connects it to the Transmission or distribution network;
- Authorizations and permits, issued by the responsible institutions, for the construction of the involved facilities;
- EPC Contracts, which should state the date at which the project is expected to be commissioned;
- Maps, drawings or photographs which may serve to assess the progress in the project construction; and
- Any other document the project developer considers appropriate to assess the actual status of the project construction.

The request shall also contain a formal Capacity declaration signed by authorized representatives of the Market Participant or BPC, as the case may be. This declaration shall undoubtedly indicate the Installed Capacity of the project, expressed electrical megawatt [MWe].

- b. For projects being developed by third parties, with which the Market Participants or BPC have signed ~~or plan sign~~ contracts for acquiring Capacity:
  - Duly signed Contract, clearly indicating the date at which these Contract will become effective and enforceable;
  - Irrevocable letter of intent or enforceable memorandum of understanding which commits both parties to sign a Contract at a certain date, which shall also indicate the expected COD of the project;
  - Temporary Firm Capacity Certificate issued by the Market Operator or documents showing its request, in cases the project is expected to be completed in the following twelve [12] months; and
  - Any other document the Market Participant or BPC considers appropriate to assess the firm commitment of acquiring the Capacity of the project being developed.

### 11.4.3 VERIFICATION OF THE INFORMATION PROVIDED

11.4.3.1 The Market Operator will review the information submitted for each project and it will assess its firmness to determine if it should be considered eligible for verifying compliance with the Capacity Obligations. In conducting such assessment, the Market Operator may:

- a. Request additional or more detailed information, which should be provided in reasonable time;
- b. Conduct investigations aimed to determine the accuracy of the information provided; and/or
- c. Request the advice of reputable experts, which may assist in the final determination.

11.4.3.2 For projects claimed to be considered by the Base Supplier, the Market Operator shall verify that such project is effectively included in the latest Procurement Plan approved by the Authority, and the project characteristics are coincident as well as the expected COD. In the cases the project is not included in such plan, it shall be considered non-eligible. In cases in which there would be discrepancies between the Procurement Plan and the request made by the Base Supplier, regarding the project Capacity or the commissioning date, the lower value of Capacity and the later commissioning date will prevail.

11.4.3.3 Based on the analysis and evaluations performed, the Market Operator will catalogue each project in any of the three following categories:

- a. Eligible for crediting Capacity, at the date requested by the Market Participant or BPC;
- b. Eligible for crediting Capacity, at a later date than the request made by the Market Participant or BPC;
- c. Not eligible for crediting Capacity.

Only the projects belonging to the first two categories will be considered in the verification of the Capacity Obligations of the involved Market Participant or BPC, as prescribed in Clause c.

#### 11.4.4 DETERMINATION OF CAPACITY OBLIGATION COMPLIANCE OF EACH MARKET PARTICIPANT

11.4.4.1 The Market Operator will assess compliance with the Ex-ante Capacity Obligations of each Market Participants or BPC, for each year in which the Market Participant or BPC has these obligations, through the comparison of two yearly values: The Capacity Obligation and the Capacity Credited of such Market Participant of each year.

11.4.4.2 The value of the Capacity Obligation of each Market Participant, for each year in which this obligation exists, will be calculated by the Market Operator according with the prescriptions included in Sub-section 11.3.1, Sub-section 11.3.2 or Sub-section 11.3.3, as the case may be. For the avoidance of doubt, the Capacity Obligation of a Competitive Supplier shall corresponds to the mandatory Capacity Obligation as established in Clause 11.3.2.1 of this Code.

11.4.4.3 The value of the Capacity Credited to each Market Participant or BPC, for the Ex-ante verification of its yearly obligations will be the addition of:

- a. Generation owned by the Market Participant or BPC, as the case may be, which have been issued the corresponding Firm Capacity Certificates by the Market Operator, and it has not been sold to other Market Participants through contracts registered with the Market Operator.

The Capacity Credited to the Market Participants or BPC shall be calculated as the addition of the values stated in the Firm Capacity Certificates of all the Generation Units it owns, minus the Capacity sold, every year, to other Market Participants through contracts registered with the Market Operator.

- b. Capacity acquired through contracts with Generators, Imports, or other Market Participants, which have been duly registered with the Market Operator.

The Capacity Credited in this case shall be calculated as the yearly addition of the Capacity purchased in all the contracts which have been registered with the Market Operator. In the cases these contracts are established between one or more Generator or Import and more than one Market Participant or BPC, the Capacity Credited to each Market Participants with Capacity Obligations of BPC shall be undoubtedly established during the Contract Registration process.

- c. Capacity which will be installed, by the Market Participant or BPC, or that it will be acquired through contracts for Capacity, with Generation Units which are under construction, provided such contracts are considered eligible by the Market Operator, as per the provisions included in Clause 11.4.3.3. This Capacity will be credited starting from the COD of the involved facility, approved by the Market Operator.

The Capacity Credited in this case shall be determined based on:

- o The values stated in the Temporary Firm Capacity Certificates, in cases in which the Market Operator has issued such certificates; or
- o The declared Capacity to be installed, as per the application of in Clause 11.4.3.3, multiplied by the Equivalent Availability Factor stated in Table I of Sub-section 9.2.2.

11.4.4.4 In the cases the Capacity Credited to a Market Participant with Capacity Obligations or BPC which is registered as Market Participant is equal or higher than the Capacity Obligation established for such Market Participant or BPC, in all of the years evaluated, the obligation shall be considered fulfilled.

11.4.4.5 In the cases the Capacity Credited to a Market Participant with Capacity Obligations or BPC which is registered as Market Participant is lower than the Capacity Obligation established for such Market Participant or BPC, in one or more of the years evaluated, the obligation shall be considered not fulfilled.

11.4.4.6 The Market Operator will categorize non-compliances with the Ex-ante Capacity Obligations as:

- a. Minor non-compliance: Non-compliance with the Capacity Obligations occurs only in one or two of the periods being verified and, in all the cases the difference between the Capacity Obligation and the Capacity Credited is below five percent [5%].
- b. Serious non-compliance: In case the non-compliance cannot be categorized as Minor non-compliance.

## **11.5 DISSEMINATION OF THE RESULTS AND ACTIONS IN CASE OF NON-COMPLIANCE**

### **11.5.1 COMPLIANCE WITH CAPACITY OBLIGATIONS REPORT**

11.5.1.1 The Market Operator shall develop a Compliance with Capacity Obligations Report, in which it will include the calculations performed, the information being utilized and the results of the verification. The report shall contain analysis and evaluations for each Market Participant or BPC individually.



11.5.1.2 The Compliance with Capacity Obligations Report shall be made available and a summary with the most important conclusions published in the Market Operator's web page.

## 11.5.2 APPEAL TO THE AUTHORITY

11.5.2.1 In cases the Market Participant or BPC which is involved in a Minor or Serious Non-compliance situation disagrees with the verification made by the Market Operator, it may appeal such decision to the Authority.

11.5.2.2 The Market Operator shall confirm or amend the Compliance with Capacity Obligations Report as per the final decision taken by the Authority. Such final decision will be communicated to all Market Participants.

## 11.5.3 ACTIONS TO BE TAKEN IN CASE OF NON-COMPLIANCE

11.5.3.1 The Market Operator will issue a Warning Notice to all Market Participants and/or BPCs which are involved in a Minor Non-compliance situation. In such Notice, the Market Operator will request the involved Market Participant or BPC, as it corresponds, to solve the Non-compliance situation by contracting additional Capacity or installing additional Generation. The Market Operator shall not register any new contract, other than contracts for increasing the credited Capacity of the involved Market Participant or BPC, until the moment the Non-compliance situation is solved.

11.5.3.2 The Market Operator will issue a Serious Non-Compliance Notice to all Market Participants and/or BPCs which are involved in a Serious Non-compliance situation, requesting to correct such situation within the pre-specified period established in the Notice, by contracting additional Capacity or installing additional Generation. Such situation will be communicated to the Authority in order the Authority takes the actions it considers appropriate, including the application of penalties.

11.5.3.3 Until the Serious Non-compliance situation is fully corrected the involved Market Participant or BPC will not be allowed to register new contracts with the Market Operator except those contracts which reduce the quantum of Non-compliance.

11.5.3.4 In cases the Market Participant or BPC involved in a Serious Non-Compliance situation does not correct it within the period stated in the Serious Non-Compliance Notice, it shall be considered an Event of Default to this Code, as established in Sub-section 17.2.1. In such a case, the Market Operator is entitled to issue Suspension or Termination Order, as indicated in Sub-sections 17.2.2 and 17.2.3, aimed to cancel the Market Participation Agreement of the involved Market Participant or BPC.



## 12. YEARLY SETTLEMENT (FOR BMC AND EXCESS LOSSES)

### 12.1 YEARLY SETTLEMENT STATEMENT

- 12.1.1.1 The Yearly Market Settlement of a Market Participant, for the previous fiscal year, shall be calculated as follows:
- The amount payable or receivable by the Market Participant, as the case may be, for the participation in the Balancing Mechanism for Capacity, calculated as per 10 of this Code; plus
  - The amount receivable by the Market Participant for the Excess Losses of one or more Transmission Service Provider, if it corresponds; plus
  - The amount payable by the Transmission Service Provider for the Excess Losses if it corresponds; and
  - The amount payable to or receivable by the Market Participant due to corrections to the Balancing Mechanism for Capacity and/or the Transmission Service Provider, arising from Yearly Extraordinary Settlements as per Sub-Section 12.3.3; plus
  - The Amount Payable to or Receivable by the Market Participant corresponding to accrued interest for previous payments not made or received on time.

### 12.2 CHARGES AND COMPENSATIONS FOR EXCESS LOSSES OF A TSP

#### 12.2.1 EXCESS LOSSES

- 12.2.1.1 The Market Operator will calculate, if it corresponds, the charges to be applied to a Transmission Service Provider which had, during the previous fiscal year, Transmission losses above a predefined target, provided that the Authority has determined this in the latest Tariff Determination for the corresponding Transmission Service Provider.
- 12.2.1.2 The Transmission Service Provider Excess Losses will be calculated by the Market Operator based on the information provided by the Commercial Metering System and charged to the corresponding Transmission Service Provider, in the Yearly Settlement, or any other period as determined by the Authority from time to time.

#### 12.2.2 CALCULATION OF THE ANNUAL LOSSES OF A TRANSMISSION SERVICE PROVIDER

- 12.2.2.1 The total Transmission losses of the Transmission Licensee “k” in the previous fiscal year shall be calculated by the Market Operator as:

$$TransLoss_k[MWh] = \sum_{h=1}^{h=8760} \left( \sum_{\forall i \in MP_k} E_{MP_{i,k,h}} \right)$$

Where:

- $TransLoss_k$  are the total Transmission losses of the Transmission Service Provider  $k$  in the previous fiscal year, expressed in MWh

- $E_{MP_{i,k},h}$  is the Energy registered by the Commercial Metering System at the Trading Point  $i$ , corresponding to the Transmission Service Provider  $k$  in the hour  $h$ .
- $\forall i \in MP_k$  means all those Trading Points corresponding to the Commercial Boundaries of the Transmission Service Provider  $k$
- $\sum_{h=1}^{h=8760}$  ( ) means the addition over the total number of hours of the previous fiscal year (8,760 or 8,784 hours, as the case may be)

12.2.2.2 Sign convention: For the application of the formula indicated in Clause 12.2.2.1, the Energy registered at each Trading Point at each particular hour shall be considered positive if it is flowing into the Transmission Network of Transmission Service Provider “k” and negative if it is flowing out from such Transmission Network.

### 12.2.3 CALCULATION OF TRANSMITTED ENERGY OF A TRANSMISSION SERVICE PROVIDER

12.2.3.1 The Market Operator will determine the total Transmitted Energy of a Transmission Service Provider, for the previous fiscal year, by adding the total Energy injected into the Transmission Network of the corresponding Transmission Service Provider. For such purpose, the Market Operator shall utilize the metering data submitted by the Metering Service Provider

12.2.3.2 Total Transmitted Energy, for the Transmission Service Provider  $k$  in the previous fiscal year shall be calculated as:

$$TransEnergy_k[MWh] = \sum_{h=1}^{h=8760} \left( \sum_{\forall i \in MP_{G \rightarrow T}} E_{MP_{i,k},h} \right)$$

Where:

- $TransEnergy_k$  is the total Transmitted Energy by the Transmission Service Provider  $k$ .
- $E_{MP_{i,k},h}$  is the Energy registered by the Commercial Metering System at the Metering Point  $i$ , corresponding to the Transmission Service Provider  $k$  in the hour  $h$ .
- $\forall i \in MP_{G \rightarrow T}$  means all those boundary points between a Transmission Network and
  - a Generator; or
  - a Distribution Network; or
  - a BPC; or
  - an Import point; or
  - a Transmission Network of another Transmission Service Provider in which the Energy is flowing into the Transmission Network of the Transmission Service Provider  $k$  (positive value according with the sign convention indicated in Clause 12.2.2.2), during hour  $h$ .
- $\sum_{h=1}^{h=8760}$  ( ) means the addition over the total number of hours of the previous fiscal year (8,760 or 8,784 hours, as the case may be)

## 12.2.4 CALCULATION OF PERCENTAGE ANNUAL LOSSES A TRANSMISSION SERVICE PROVIDER

12.2.4.1 The Market Operator will determine the Annual Loss expressed in percentage of a Transmission Service Provider, for the previous fiscal year, by dividing the total Transmission losses by the Transmitted Energy of the corresponding Licensee.

$$AnnualLoss_k[\%] = \frac{TransLoss_k[\%]}{TransEnergy_k[MWh]} * 100$$

## 12.2.5 DETERMINATION OF EXCESS LOSSES

12.2.5.1 In case the Transmission Service Provider's Percentage Annual Loss is lower or equal to the allowed Losses, determined by the Authority in the latest Tariff Determination for the corresponding Transmission Service Provider, the Excess Losses will be zero for such Transmission Service Provider and there will be no charges imposed to it. Otherwise, the amount of excess losses (in MWh) shall be calculated as:

$$TSP\ Excess\ Losses\ (MWh)_k = TransLoss_k[MWh] - AllowLoss(\%)_k * TransEnergy_k[MWh]$$

Where:

- $TSP\ Excess\ Losses_k$  is the amount of Excess Losses of the Transmission Service Provider  $k$ , expressed in MWh.
- $TransLoss_k$  are the total Transmission losses of the Transmission Service Provider  $k$  in the previous fiscal year, expressed in MWh, calculated as per Clause 2.6.2.1
- $AllowLoss_k$  is the allowed losses, expressed in percent, as determined by the Authority in the latest Tariff Determination of Transmission Service Provider  $k$ .
- $TransEnergy_k$  is the total Transmitted Energy by the Transmission Service Provider  $k$  in the previous fiscal year, expressed in MWh, calculated as per Clause 12.2.3.2

## 12.2.6 CALCULATION OF CHARGES TO A TSP FOR EXCESS LOSSES:

12.2.6.1 The charges for Excess losses of a Transmission Service Provider shall be calculated multiplying the Transmission Service Provider Excess Losses, expressed in MWh, by the weighted average Marginal Price of the previous fiscal year.

12.2.6.2 The yearly weighted average Marginal Price, expressed in PKR/MWh, shall be calculated as:

$$YMP\ [PKR/MWh] = \frac{\sum_{h=1}^{h=8760} (TotDem_h[MWh] * Marg_h[PKR/MWh])}{\sum_{h=1}^{h=8760} TotDem_h[MWh]}$$

Where:

- $YMP$  is the average yearly Marginal Price, corresponding to the previous fiscal year, expressed in PKR/MWh.
- $Marg_h$  is the system Marginal Price, corresponding to the hour  $h$ , calculated as per Clause 6.3.2.3

- $TotDem_h$  is the total Energy demanded by Market Participants in hour  $h$ , calculated as per Clause 6.3.2.3.
- $\sum_{h=1}^{8760}$  ( ) means the addition over the total number of hours of the previous fiscal year (8,760 or 8,784 hours, as the case may be)

The Charges to be applied to the Transmission Service Provider which has incurred in Excess Losses, for the previous fiscal year, shall be calculated as:

$$ExcLossCharge_k[PKR] = YMP \left( \frac{PKR}{MWh} \right) \times TSP \text{ Excess Losses } (MWh)_k$$

Where:

- $ExcLossCharge_k$  is the charge to be applied to Transmission Service Provide  $k$ , for Excess Losses, corresponding to the previous fiscal year.
- YMP is the average yearly Marginal Price, corresponding to the previous fiscal year, as indicated in Clause. 12.2.6.2
- $TSP \text{ Excess Losses}_k$  is the amount of Excess Losses of the Transmission Service Provider  $k$ , expressed in MWh, in the previous fiscal year, as indicated in Clause 12.2.5.1

## 12.2.7 CALCULATION OF COMPENSATIONS TO MARKET PARTICIPANTS REPRESENTING DEMAND

12.2.7.1 The amounts charged by the Market Operator to the Transmission Service Provider for Excess Losses will be transfer to the Market Participants in the Yearly Settlement Statement corresponding to the previous fiscal year, proportionally to the total Energy withdrew by each Market Participant, from the Transmission of Distribution Network, in the previous fiscal year.

12.2.7.2 The total Energy withdraw from the Transmission or Distribution Network, as the case may be, by a Market Participant shall be calculated as:

$$YEW_j[MWh] = \sum_{h=1}^{8760} \left[ \sum_{\forall i \in MP_j} (Act\_E_{i,h}[MWh] * N_{ih}) \right]$$

Where:

- $YEW_j$  is the total Energy withdraw by Market Participant  $j$  from the Transmission or Distribution Network, as the case may be, in the previous fiscal year, expressed in MWh
- $Act\_E_{i,h}$  is the Energy interchanged at the Trading Point  $i$  in the hour  $h$ , calculated as per the formulations stated in Clause 6.3.3.3.
- $N_{i,h}$  is a number which takes the values of:
  - $-1$  if the value of  $Act\_E_{i,h}$  is negative (Energy flowing out of the Transmission or Distribution Network, according with the sign convention indicated in Clause 6.3.1.4)
  - $0$  otherwise
- $\forall i \in MP_j$  means all those Trading Points in which Market Participant  $j$  is involved

12.2.7.3 The compensation a Market Participant will receive for Excess Losses of the Transmission Service Providers will be calculated as:

$$CA_{EL_j}[PKR] = \frac{YEW_j[MWh]}{\sum_j YEW_j [MWh]} * \sum_k ExcLossCharge_k[PKR]$$

Where:

- *ExcLossCharge<sub>k</sub>* is the charge applied to Transmission Service Provide *k*, as per clause 12.2.7.2
- *YEW<sub>j</sub>* is the Energy withdraw by Market Participant *j* from the Transmission or Distribution Network, as the case may be, in the previous fiscal year, expressed in MWh
- $\sum_k$  means the addition of all Transmission Service Providers

## 12.3 SETTLEMENT STATEMENTS

### 12.3.1 PRELIMINARY YEARLY SETTLEMENT STATEMENTS

- 12.3.1.1 Within ten (10) working days of the closing of the Balancing Mechanism for Capacity, the Market Operator shall send, through electronic means, to each Market Participant and to the Service Providers, a Preliminary Yearly Settlement Statement.
- 12.3.1.2 The Preliminary Yearly Settlement Statement for Market Participants shall, at least, include:
- a. The results of the Balancing Mechanism for Capacity
  - b. The credits associated with Excess Losses of one or more Transmission Service Provider for the previous fiscal year, if it corresponds.
  - c. The payable or accrued interest for previous payments not made on time; and
  - d. The eventual corrections associated with any eventual Extraordinary Settlement.
- 12.3.1.3 The Preliminary Settlement Statement for a Transmission Service Providers shall, at least, include:
- a. The payment associated with Excess Losses of the Transmission Service Provider for the previous fiscal year, if it corresponds:
  - b. The eventual corrections associated with any eventual Extraordinary Settlement, and
  - c. The payable interest for previous payments not made on time.
- 12.3.1.4 In case a Market Participant or a Transmission Service Provider considers that an error or discrepancy exists in the Preliminary Yearly Settlement Statement, it shall provide the Market Operator with a written Notice of Claim within [five (5)] working days of receipt of the Preliminary Yearly Settlement Statement.
- 12.3.1.5 The Notice of Claim shall clearly state the issue date of the Preliminary Yearly Settlement Statement, the item claimed, the reasons for the claimed, the amount claimed, if appropriate, and shall be accompanied by all available evidence to support the claim.

- 12.3.1.6 The Market Operator shall review the Preliminary Yearly Settlement Statement in the light of the claim of such Market Participant or Transmission Service Provider and conclude whether the claim is correct or incorrect before, releasing the Final Yearly Settlement Statement to Market Participants and Transmission Service Providers.
- 12.3.1.7 If the Market Operator does not agree with the matters set out in the claim, it shall make reasonable efforts, taking into account the time it received the Notice of Claim and the complexity of the issue involved, notify the relevant Market Participant or Transmission Service Provider and resolve the issue before issuing the Final Yearly Settlement Statement. The Market Operator may request the relevant Market Participant or Service Provider to provide additional information in respect of disputed items.
- 12.3.1.8 The Market Operator shall notify affected Market Participants of the claimed error or discrepancy in the Preliminary Yearly Settlement Statement and whether or not the claimed error or discrepancy shall be corrected in the Final Yearly Settlement Statement, attaching all necessary supporting documentation.

### 12.3.2 FINAL YEARLY SETTLEMENT STATEMENTS

- 12.3.2.1 Within twenty five [25] working days after closing of the Balancing Mechanism for Capacity, the Market Operator shall send the Final Yearly Settlement Statement to each Market Participant and Transmission Service Provider, using a format similar to the Preliminary Settlement Statement.
- 12.3.2.2 A Market Participant or a Service Provider may challenge the Final Yearly Settlement Statement with a valid justification within [15] working days of its issuance. This dispute may relate to:
  - a. The registered quantities, or
  - b. The settlement amounts, either in Market Transactions or interest charges for late payments.
- 12.3.2.3 The Market Operator and the Market Participant or Transmission Service Provider shall make reasonable efforts to mutually settle the disputes within [30] calendar days after the dispute is submitted to the Market Operator. If the Market Operator and the Market Participant or the Transmission Service Provider, as the case may be, are unable to settle the dispute, any of the parties may refer to the dispute resolution mechanism in accordance with 15 of this Code.

### 12.3.3 EXTRAORDINARY YEARLY SETTLEMENTS

- 12.3.3.1 When:
  - a. The Market Participant and the Market Operator resolve a complaint in a manner that causes the mutually agreed upon settlement amount to differ from the Final Yearly Settlement Statement; or
  - b. The application of the dispute resolution mechanism indicated in Sub-Section 15.5 in relation with a Disputed Amount is resolved in a way which implies a recognition of all or part of the claims raised by the Market Participant or Transmission Service Provider;

the Market Operator shall produce an Extraordinary Settlement Statement for the corresponding fiscal year. This Extraordinary Settlement will supersede the previously issued Final Yearly Settlement Statement for fiscal year.

## **12.4 PAYMENT NOTIFICATIONS AND CREDITED AMOUNTS**

### **12.4.1 NOTIFICATIONS TO MARKET PARTICIPANTS**

12.4.1.1 The Market Operator, within 5 working days after issuance of the Final Yearly Settlement Statement or Extraordinary Yearly Settlement Statement, as the case may be, shall:

- a. Issue a Payment Notification in respect of the previous fiscal year to all Market Participants and Transmission Service Providers which resulted in the Final Yearly Settlement Statement with an amount payable, indicating the charge that each shall pay. This amount shall be coincident with the Final or Extraordinary Yearly Settlement Statement, as the case may be, which at the same time will act as a description of the detailed calculations.
- b. Issue a Credit Notification in respect of the previous month to all Market Participants which resulted in the Final Yearly Settlement Statement with an amount receivable. These amounts shall be coincident with the Final Yearly Settlement Statement, which at the same time will act as a description of the detailed calculations.

12.4.1.2 The Market Operator, in this process, shall act as an independent entity, without assuming payment responsibilities. Obligation of Payment and debts shall remain with the relevant Market Participants or Transmission Service Provider. For the avoidance of doubt, the Market Operator shall not be held liable for any kind of non-payment by any of the Market Participants.

### **12.4.2 DISAGREEMENTS WITH THE NOTIFICATIONS**

12.4.2.1 Each Market Participant which receives a Payment or Credit Notification, as per clause 12.4.1.1 above, shall pay any net debit, and shall be entitled to receive any net credit, shown in the Final Yearly Settlement Statement on the Payment Date, whether or not there is any dispute regarding the amount of the debit or credit.

12.4.2.2 The payment of the amount by the Market Participant or the Market Operator, as the case may be, pursuant to clause 8.3.2.1 shall not prejudice the right of the Market Participant to seek resolution of the dispute pursuant to 15 of this Code.

## 13. PAYMENT SYSTEM

### 13.1 COMPONENTS OF THE PAYMENT SYSTEM

#### 13.1.1 MARKET OPERATOR ACCOUNTS

- 13.1.1.1 The Market Operator will hold ledger trust accounts specified in Clause 13.1.1.3, which will be held on trust for the Market Participants for the purposes of Market Commercial Code. A separate ledger account shall be opened for each of the accounts referred to in Clause 13.1.1.3.
- 13.1.1.2 Costs Associated with the Market Operator Accounts. Unless otherwise specified in this Chapter of the Code, the Market Operator will recover all costs incurred in connection with opening, maintaining and administering the Market Operator Accounts through the Market Operator Fee.
- 13.1.1.3 The Market Operator will hold and operate the following separate trust accounts:
- a. Market Operator Clearing Account, to and from which payments according to this Code, are made. This includes payments associated with:
    - i. The Balancing Mechanism for Energy
    - ii. The Balancing Mechanism for Capacity;
    - iii. Ancillary Services and Must-run Generation;
    - iv. Transmission Use of System Charges;
    - v. If it corresponds, Metering Service Charges;
    - vi. Market Operator Fee and , if it corresponds, the System Operator Fee;
    - vii. Default Interest for payments not done at the Payment Date, calculated in accordance with Clause 13.3.5;
    - viii. other amounts included in a Payment Notification issued by the Market Operator which relates with Energy or Capacity transactions in the CTBCM, in accordance with this Chapter of the Code.
  - b. Market Operator Surplus Account, in accordance with Clause 13.1.1.5.
- 13.1.1.4 Market Participants shall make all payment, due in accordance with the Payment Notifications into the Market Operator Clearing Account by 10:00 hours on the Payment Date. The Market Operator shall pay Market Participants from the Market Operator Clearing Account in accordance with Final Settlement Statements by Close of Banking Business on the Payment Date.
- 13.1.1.5 The Market Operator shall operate the Market Operator Surplus Account as follows:
- a. any amounts credited to the Market Operator in respect of financial penalties applied to Market Participants or Service Providers for Non-Compliance with the provision of this Code, as indicated in Section 17.3 of this Code, including default interest on such penalties shall be deposited to the Market Operator Surplus Account;



- b. the funds referred to in paragraph (a) shall first be applied towards any expenses, loss or costs incurred by the Market Operator in relation to the any Market Participant or Service Provider Non-Compliance. For avoidance of doubt, these funds shall not be applied towards expenses, losses or costs incurred in relation to the Service Providers.
- c. in the event that there are funds in the Market Operator Surplus Account in excess of an amount to be determined by the Authority, the amount of such excess will be used to reduce the Market Operator Fee for administration of the Market.

### **13.1.2 MARKET PARTICIPANT'S ACCOUNT.**

- 13.1.2.1 Each Market Participant shall maintain a bank account with a bank approved by the Market Operator from which payments to, and from, the Market Operator shall be made pursuant to this Code. No Market Participant shall effect any change to its bank account without giving a prior written notice to the Market Operator of no less than ten [10] Business Days.

### **13.1.3 SERVICE PROVIDER'S ACCOUNT.**

- 13.1.3.1 Each Transmission and, if it corresponds, Metering Service Provider shall maintain a bank account, with a bank approved by the Market Operator, from which payments to, and from, the Market Operator shall be made pursuant to this Code. Neither a Transmission nor Metering Service Providers shall effect any change to its bank account without giving a prior written notice to the Market Operator of no less than ten [10] Business Days.

## **13.2 MARKET OPERATOR PAYMENTS CALENDAR**

### **13.2.1 CONTENTS OF THE MARKET OPERATOR PAYMENTS CALENDAR**

- 13.2.1.1 Each year, the Market Operator will prepare a draft Market Operator's Payments Calendar for the following fiscal year showing:
  - d. the dates on which the Market Operator will issue Preliminary Settlement Statements to all Market Participants;
  - e. the dates on which the Market Operator will issue Final Settlement Statements to all Market Participants pursuant to Clause 8.2.3.1;
  - f. the dates on which the Market Operator will issue Payment or Credit Notifications to Market Participants who owe money to the Market Operator;
  - g. the dates when Market Participants from whom money is owed are required to make payments into the Market Operator Clearing Account, in accordance with the Payment Notifications issued; and
  - h. the dates when the Market Participants to whom money is owed in accordance with the Credit Notifications will receive payments from the Market Operator Clearing Account,
  - i. provided that in respect of the first fiscal year following the Commencement Date, the Market Operator's Payments Calendar shall be established pursuant to Clause 13.2.2.4.

- 13.2.1.2 Calendar Content and Format. The Market Operator may change the content or format of the Market Operator's Payments Calendar for future years upon prior written notification to Market Participants

## 13.2.2 DATES FOR THE MARKET OPERATOR'S PAYMENTS CALENDAR

- 13.2.2.1 Subject to Clause 13.2.2.4, on July 1<sup>st</sup> of each year, the Market Operator shall publish on the Website, a draft of the Market Operator's Payments Calendar for the following calendar year. Any Market Participant may submit comments and objections to the Market Operator within two weeks of such publication of the draft the Market Operator's Payments Calendar.
- 13.2.2.2 No later than [September 1<sup>st</sup>] in each year, the Market Operator shall publish on the Website, the final the Market Operator's Payments Calendar for the following calendar year, after considering the comments and objections received pursuant to Clause 13.2.1.1.
- 13.2.2.3 The final Market Operator's Payments Calendar, made available in accordance with Clause 13.2.2.2 or Clause 13.2.2.4, shall be binding on the Market Operator and on all Market Participants for the calendar year to which it relates.
- 13.2.2.4 Initial Market Operator Payment Calendar:
- a. Within fifteen [15] Business Days of the CMOD, the Market Operator shall publish the first Market Operator's Payments Calendar on the Website. This first Market Operator's Payments Calendar shall be followed by the Market Operator and the Market Participants for a period of 2 months from the date of its notification, or the remaining period of the calendar year, whichever is less.
  - b. Within fifteen [15] Business Days following the publication of the first Market Operator's Payments Calendar, the Market Participants shall submit their comments to the first Market Operator's Payments Calendar notified by the Market Operator pursuant to paragraph (a) above.
  - c. Within 30 Business Days of receiving comments from the Market Participants pursuant to paragraph (b) and taking into account their comments, the Market Operator shall amend the first Market Operator's Payments Calendar, if required, and notify the Market Operator's Payments Calendar for the remaining part, if any, of the first fiscal year and the next following fiscal year.

## 13.3 PAYMENT PROCEDURES

### 13.3.1 PAYMENT PROCESS

- 13.3.1.1 Each Market Participant shall remit to the Market Operator Clearing Account the amount shown on the Payment Notification, as payable by that Market Participant, by not later than 10.00 a.m. on the Payment Date.

- 13.3.1.2 The Market Operator shall calculate the amounts available to be distributed to Market Participants and Service Providers to whom payments are due on the Payment Date, and shall remit from the Market Operator Clearing Account to the Market Participant's Account or Service Provider's Account, as the case may be, the funds available within the Market Operator Clearing Account, no later than Close of Banking Business on the Payment Date
- 13.3.1.3 If any Market Participant becomes aware that an amount will not, or is unlikely to be, remitted to the Market Operator by 10:00 a.m. on the relevant Payment Date for any reason, it shall immediately notify the Market Operator, giving full details of the delay, including the reasons for such delay. Such information shall be confirmed in writing within 24 hours of the initial notification. The Market Participant shall make all reasonable efforts to remit the amount as soon as possible, by an alternative method, if necessary, to ensure that funds are received as soon as possible after 10:00 hours on the Payment Date.

### 13.3.2 PAYMENT DEFAULT.

- 13.3.2.1 If by 10:00 a.m. on a Payment Date, the Market Operator, in its reasonable opinion, believes that all or any part of any amount due to be remitted to the Market Operator Clearing Account by any Market Participant will not be remitted or has not been remitted, the Market Operator shall, notwithstanding the efforts of the Market Participant to pay the amount as soon as possible, make reasonable endeavours to enforce, as quickly as possible, the defaulting Market Participant's Security Cover, to the extent necessary to pay the Default Amount.
- 13.3.2.2 If the Market Operator is not able to recover the Default Amount and the Default Interest, if any, it shall, as soon as possible after taking action under Clause 13.3.2.1, take any steps it deems appropriate, including those specified in 17 of this Code, in its sole discretion against the defaulting Market Participant to recover the Default Amount and any Default Interest.
- 13.3.2.3 If there are insufficient funds standing in the Market Operator's Clearing Account to satisfy in full the amounts due by the Market Participants and Service Providers, the Market Operator shall reduce payments to Market Participants to whom payments are due, and to itself, on that Payment Date, on a proportional basis, to the extent necessary to clear the Market Operator Clearing Account by the close of Banking Business on the Payment Date. Such Market Participants, Service Providers and itself shall be paid the shortfall in accordance with Clause 13.3.2.5, as and when funds are received.
- 13.3.2.4 In the event that the Market Operator reasonably believes that an outstanding amount, which has not been paid by 10:00 hours on the relevant Payment Date, is likely to be paid by no later than the Close of Banking Business on the next Business Day, then the Market Operator may, but shall not be obliged to, delay enforcing that Market Participant's Security Cover or taking other measures to recover payment until after the Close of Banking Business on the next Business Day, provided that, notwithstanding such delay, the defaulting Market Participant shall continue to be liable to pay Default Interest on the outstanding amount pursuant to Clause 13.3.5.1.

13.3.2.5 The Amounts credited to the Market Operator Clearing Account following payment of a Default Amount, or as a result of enforcing the defaulting Market Participant's Security Cover, shall be applied to reimburse any Market Participant, who has not received its full payment pursuant to Clause 13.3.2.3 in the same proportion by which payments to such Market Participant had been reduced. Such reimbursement, if any, shall be made on the next Business Day following the receipt of funds in the Market Operator's Clearing Account.

### 13.3.3 SET-OFF.

13.3.3.1 The Market Operator is authorised to recoup, set off or apply any amount to which any defaulting Market Participant is, or will be, entitled, for or towards the satisfaction of any of that Market Participant's debts arising under the Settlement and billing process in accordance with Chapter 7 and Chapter 8 of this Code, or any penalty imposed on the Market Participant by the Market Operator pursuant to 17 of this Code. The oldest outstanding amounts will be settled first in the order of the creation of such debts.

### 13.3.4 ORDER OF PAYMENTS

13.3.4.1 The Market Operator shall apply payments received in respect of amounts owing to Market Participants to repay the relevant debts in the order of the creation of such debts.

### 13.3.5 DEFAULT INTEREST

13.3.5.1 Without prejudice to the ability of the Market Operator to enforce the Security Cover, if any, provided by the defaulting Market Participant, such Market Participant shall pay Default Interest on Default Amounts for the period commencing from the relevant Payment Date to the date in which the payment is received by the Market Operator, together with any related costs incurred by the Market Operator.

13.3.5.2 If the Market Operator succeeds in enforcing the Security Cover provided by the defaulting Market Participant, the Market Operator shall be entitled to withdraw from the proceeds of such security, in addition to the Default Amount, all costs incurred and Default Interest from the date of such debit to the date of enforcement of the Security Cover.

### 13.3.6 OVERPAYMENTS

13.3.6.1 If a Market Participant receives an overpayment on any Payment Date, it shall notify the Market Operator of such overpayment by voice communication over a telephone line. Such communication shall be confirmed in writing within 24 hours of receipt of an overpayment.

13.3.6.2 The Market Participant shall return the received overpayment in full within five [5] days from the Payment Date corresponding to such overpayment.

13.3.6.3 If a Market Participant has received the overpayment as a result of error on the part of the Market Operator and such overpayment has not been repaid by the Market Participant within five [5] days of the Payment Date, the Market Operator shall be entitled to Default Interest on the amount of the overpayment on and from the fifth day following the Payment Date, until the repayment is credited to the Market Operator Clearing Account, and the Market Operator will be entitled to treat the overpayment, and any interest accruing thereon, as a Default Amount to which Clause 13.3.2.1 and 13.3.2.2 shall apply.

## **14. GUARANTEES AND SECURITY COVERS**

### **14.1 REQUIREMENTS FOR PROVIDING SECURITY COVERS**

#### **14.1.1 SECURITY COVERS PROVIDED BY MARKET PARTICIPANTS**

- The Market Participants shall provide to the Market Operator appropriate Security Covers for:
    - a. Guaranteeing their monthly purchases on the Balancing Mechanism for Energy, along with the associated cost for the provision of Ancillary Services, Must Run Generation and the charges to Service Providers; and
    - b. Guaranteeing their yearly purchases on the Balancing Mechanism for Capacity.
- 14.1.1.1 Security Covers for guaranteeing purchases on the Balancing Mechanism for Energy shall be provided by the Market Participants:
- a. Before its Registration as Market Participant, pursuant Clause 3.3.2.2 of this Code; and
  - b. Before registering any Contract for which the Market Participant is a party.
- 14.1.1.2 Security Covers for guaranteeing purchases on the Balancing Mechanism for Capacity shall be provided by the Market Participants as indicated in Chapter 10 of this Code.

#### **14.1.2 ACCEPTABLE FORMS OF SECURITY COVERS**

- 14.1.2.1 Market Participants which are required to provide a Security Cover pursuant the provisions of this Code, for the amount prescribed by the Market Operator, shall provide and maintain such Security Cover, in any of the following forms:
- a. Cash on deposit in an interest-bearing escrow or trust account, maintained at a bank or other financial institution acceptable to the Market Operator, that shall be payable on demand to the Market Operator; or
  - b. An irrevocable direct pay Letter of Credit, or other guarantee of payment acceptable to the Market Operator, provided by a bank or financial institution acceptable to the Market Operator, that shall be executable on demand to the interest of the Market Operator.

### **14.2 SECURITY COVERS ASSOCIATED WITH PURCHASES AT THE BME**

#### **14.2.1 SECURITY COVERS PROVIDED AT REGISTRATION AS MARKET PARTICIPANT**

- 14.2.1.1 The amount of the Security Cover that shall be provided by a Market Participant pursuant Clause 3.3.2.2 of this Code shall be determined depending on the Category at which the Market Participant is requiring registration:
- a. If the Market Participant is registering as Generator, Supplier or Trader, no Security Cover will be required.
  - b. If the Market Participant is registering as BPC, the amount of the Security Cover shall be calculated as two months of average consumption of the BPC multiplied by six (6) PKR/kWh.

- c. When a Market Participant registers a new Contract, the amounts of the Security Covers provided during the registration process will be deducted from the amounts required for registering the Contract.

#### **14.2.2 AMOUNT OF SECURITY COVERS ASSOCIATED TO LEGACY CONTRACTS**

- 14.2.2.1 Market Participants which are party in a Legacy Contract shall provide to the Market Operator an initial Security Covers, which amount is indicated in Clause 19.2.4.1

#### **14.2.3 AMOUNT OF THE SECURITY COVERS FOR NEW CONTRACTS**

- 14.2.3.1 The Market Operator shall calculate the Security Cover that shall be provided by the Market Participant, which shall be maintained until a new, different, amount is determined by the Market Operator, before incorporating such Contract in the Market Operator Contract Register. The Security Cover that will be provided shall guarantee the obligations of the Market Participant associated with the Contract being registered, plus its obligations associated with any other Contract already registered with the Market Operator.
- 14.2.3.2 The amount of the Security Cover that shall be provided pursuant Clause 14.2.3.1 shall be determined by the Market Operator estimating the expected payments from such Market Participant, towards the purchase of Energy in the Balancing Mechanism for Energy, plus the payments associated with the Ancillary Services and Must Run Generation, plus the payment towards the Service Provider charges, the Market Operator fee and, if it corresponds, the System Operator fee, for next following two (2) Energy Settlement Periods.
- 14.2.3.3 Within six [6] month from the issuing of this Market Commercial Code, the Market Operator will develop, and submit to the Authority for approval, a Commercial Code Operational Procedure for determining the amounts of the Security Covers which shall be provided by the Market Participants while registering new Contracts.

#### **14.2.4 RECEPTION AND VERIFICATION OF THE PROVIDED SECURITY COVERS**

- 14.2.4.1 Once the Security Cover is constituted, the Market Participant shall notify the Market Operator about this, providing it with the appropriate documents which evidence such constitution.
- 14.2.4.2 The Market Operator shall revise the documents furnished verifying if the Security Cover is adequate and in accordance with the provisions of this Code. The Market Operator shall verify, at least, that:
  - a. The amount of the Security Cover is equal or above the amount calculated by the Market Operator;
  - b. The escrow account in which the Market Participant deposited the prescribed amount complies with the requirements of Clause a, or the bank which has issued the Letter of Credit complies with the requirements of Clause b; and
  - c. There are no limitations for the MO to dispose the funds deposited in the escrow account or to execute the letter of credit in case of non-payment by the Market Participant.

- 14.2.4.3 In the case the provided Security Cover is adequate, the Market Operator will notify the acceptance of the Security Cover and it will proceed to register the Market Participant or the Contract, as it corresponds.
- 14.2.4.4 In the case the Market Operator considers that the Security Cover provided is not adequate, it will notify the Applicant or Market Participant, as it corresponds, indicating clearly the reasons for the rejection and with the necessary actions that may be taken by the Applicant or the Market Participant in order to provide an acceptable Security Cover.

#### 14.2.5 REGISTRATION OF THE SECURITY COVERS

- 14.2.5.1 The Market Operator shall organize and maintain a register for the Security Covers provided by each Market Participant. The purpose of the Security Cover Register is to keep records of the documents which constitute the Security Covers presented by each Market Participant, and their eventual modifications.
- 14.2.5.2 The Security Cover Register shall record for each Market Participant:
- a. The identification of the Market Participant
  - b. The amount of the Security Cover provided;
  - c. The form in which the Security Cover was provided, including;
    - i. The identification of the bank or other financial institution account in which the Market Participant deposited cash; or
    - ii. The identification of the bank or other financial institution which has issued the Letter of Credit.
- 14.2.5.3 The Market Operator shall update the Security Cover Register when,
- a. The Market Participant provides a new Security Cover, or it modifies the amounts guaranteed;
  - b. A Security Cover is totally or partially executed; or
  - c. The Market Participant terminates its participation and the Security Covers are returned.

#### 14.2.6 PERIODIC REVIEW OF THE COVERED AMOUNTS

- 14.2.6.1 The Market Operator shall monitor, on weekly basis, the estimated Amounts Payable accrued by a Market Participant for covering its obligations on the BME.
- 14.2.6.2 For the calculation of the amounts indicated in Clause 14.2.6.1 the Market Operator shall consider the following period:
- a. Period start: The closing date of the latest Final Settlement Statement, already paid by the Market Participant;
  - b. Period end: The day immediately after to which the calculation is being performed.
- 14.2.6.3 For determining the accrued Amounts Payable, of each Market Participant, the Market Operator will use:



- a. The information provided by the Commercial Metering System, in relation with the Energy injected and/or extracted from the grid;
  - b. The information provided by the System Operator in relation with the compensation for Ancillary Services and Must Run Generation;
  - c. The information contained in the Contracts Register; and
  - d. An estimation of the charges to be paid to the Service Providers, the Market Operator fee and, if it corresponds, the System Operators fee.
- 14.2.6.4 In addition to Clause 14.2.6.1, the Market Operator shall monitor, on a rolling 2 month basis, the Amounts Payable by the Market Participant based on the Preliminary Settlement Statement and any Invoice that may be outstanding, as compared to the Market Participant's Security Cover submitted to the Market Operator.
- 14.2.6.5 In the case that, at any time during the Settlement Period, the accrued Amounts Payable of a Market Participant to discharge its obligations in the BME, calculated pursuant Clause 14.2.6.1 exceeds [eighty percent (80%)] of the amount of Security Cover provided by such Market Participant, the Market Operator shall notify the Participant of the same.
- 14.2.6.6 Within 5 Business Days of receiving notification from the Market Operator, the Participant shall:
- a. Make a prepayment to the Market Operator, depositing in the Market Operator Clearing Account an amount sufficient to reduce the remaining estimated Amount Payable by the Market Participant to 50% of the Security Cover provided; or
  - b. Provide additional Security Cover to the Market Operator in an amount sufficient to reduce the estimated Amount Payable by the Market Participant to 50% of the increased Security Cover provided. The increased Security Cover shall thereafter be maintained by the Participant until the amount of such Security Cover is modified by the Market Operator.
- 14.2.6.7 If the Amounts Payable to the Market for the applicable 2 month time period, calculated pursuant Clause 14.2.6.4, are more than 70% of the such Security Cover, the Market Operator shall notify the Participant, in writing, informing the Participant to increase the Security Cover to the extent that the actual payments do not exceed 50% of the Security Cover. Within 5 Business Days after receipt of a notification to increase Security Cover, the Participant shall provide to the Market Operator evidence of such increased Security Cover as requested by the Market Operator in one of the forms specified in Clause 14.1.2.1. The Participant shall thereafter maintain the increased Security Cover until the amount of such Security Cover is modified by the Market Operator
- 14.2.6.8 If a Participant fails to respond to any notifications received under Clause 14.2.6.6 or Clause 14.2.6.4 above within the time specified therein, the Market Operator may suspend all rights and privileges afforded to the Market Participant under these Rules in accordance with 17 of this Code.

## 15. SETTLEMENT OF DISPUTES

**Note 1:** This Chapter shall be fully reviewed and adapted by the CPPA-G lawyers, to ensure the provisions suggested are not in conflict with any Pakistani legislation and/or they invade attributions of other jurisdictions.

**Note 2:** the proposed settlement of disputes process rely on the existence of a Counsellor, which should be appointed by the Authority. The reasons for this is that is expected that, at least during some time, most of the disputes will involve the Market Operator (or the System Operator) rather than disputes among market participants. Therefore, it doesn't seem appropriate that the MO designs such Counsellor.

### 15.1 DISPUTE RESOLUTION COUNSELLOR AND PANEL

#### 15.1.1 DISPUTE RESOLUTION COUNSELLOR

15.1.1.1 The Authority shall appoint a Dispute Resolution Counsellor with the Market Operator. The Dispute Resolution Counsellor shall have following powers and duties:

- a. to administer and ensure the effective operation of the Dispute resolution provisions of this Code;
- b. to specify the format for Notice of Dispute and Response;
- c. to nominate persons to be members of the Dispute Resolution Panel;
- d. to assign members of the Dispute Resolution Panel to arbitrate or resolve Disputes; and
- e. to facilitate the resolution of Disputes governed by the dispute resolution provisions of this Code and, if applicable, the Grid Code.

15.1.1.2 In exercising his or her powers and performing his or her duties, the Dispute Resolution Counsellor shall comply with all applicable provisions of this Code and the Grid Code, as may be applicable.

15.1.1.3 The person appointed by the Authority as the Dispute Resolution Counsellor:

- a. shall have a degree in law from a recognized university, has held a certificate to practice as an advocate for a period of not less than seven years, and holds a current certificate to practice law in Pakistan;
- b. shall have a detailed understanding and experience of dispute resolution practice and procedures that do not involve civil litigation before the courts, such as mediation and arbitration;
- c. shall have an understanding of the Pakistani electricity industry or the Capacity to quickly acquire such an understanding;
- d. is not, and does not have a spouse or relative that is, a director, officer, employee or agent of, or has a, direct or indirect legal or beneficial interest in, or commercial affiliation with:
  - i. the Market Operator or the System Operator;

- ii. a Transmission Service Provider or an Affiliate of the Transmission Service Provider; or
    - iii. a Market Participant or an Affiliate of a Market Participant
  - e. has provided to the Authority a signed declaration in the in the form set forth in Annex II hereto.
- 15.1.1.4 The Dispute Resolution Counsellor shall be appointed for a fixed term of up to five (5) years and shall be eligible for re-appointment for one additional fixed term of up to five (5) years.
- 15.1.1.5 The Authority may remove the Dispute Resolution Counsellor from office if the Dispute Resolution Counsellor fails to act in accordance with this Codes or the Grid Code or is convicted of a serious criminal offence or has committed a conduct involving serious moral turpitude.

## 15.1.2 DISPUTE RESOLUTION PANEL

- 15.1.2.1 The Authority shall constitute a Dispute Resolution Panel to arbitrate or otherwise resolve Disputes between:
  - a. The System Operator or the Market Operator or a Service Provider and any Market Participant;
  - b. The Market Operator and any person who has been denied certification by the Market Operator as a Market Participant; and
  - c. Market Participants,
 to the extent that such Disputes are, in accordance with the provisions of this Code or the Grid Code.
- 15.1.2.2 Each member of the Dispute Resolution Panel shall act impartially and shall not favor any party to a Dispute directly or indirectly.
- 15.1.2.3 The Dispute Resolution Panel will consist initially of three (3) qualified members, which could be increased up to five (5) if required, qualified persons, each of whom shall be appointed by the Authority, to serve for a term of five years. A member of the Dispute Resolution Panel whose term has expired may be re-appointed by the Authority for a further term of five years, provided that:
  - a. no person may serve on the Dispute Resolution Panel for more than two terms;
  - b. where the term of a member of the Dispute Resolution Panel expires while the member is acting as an Arbitrator in respect of a Dispute then, the member shall be automatically re-appointed for such time as may be necessary to permit the member to complete the arbitration or other dispute resolution process; and
  - c. the term of any member re-appointed pursuant to paragraph (b) shall not be counted for purposes of determining the member's eligibility for reappointment under paragraph (a) of this provision.
- 15.1.2.4 Appointment of Members of Dispute Resolution Panel:

- d. The Authority shall employ the services of the Dispute Resolution Counsellor to provide to the Authority a list of a number of qualified nominees equal to the strength of the Dispute Resolution Panel.
  - e. The Authority shall work with the Dispute Resolution Counsellor to develop the criteria and processes for the selection of members of the Dispute Resolution Panel and may consult with the Dispute Resolution Counsellor from time to time in that regard.
- 15.1.2.5 No person shall be appointed by the Authority as a member of the Dispute Resolution Panel unless that person:
- f. has a detailed understanding and experience of dispute resolution practice and procedures that do not involve civil litigation before the courts, such as mediation and arbitration;
  - g. has an understanding of the Pakistan electricity industry or the Capacity to quickly acquire such an understanding;
  - h. is not, and does not have a spouse or relative that is, a director, officer, employee or agent of, or has a, direct or indirect legal or beneficial interest in, or commercial affiliation with:
    - i. the Market Operator or the System Operator;
    - ii. a Transmission Service Provider or an Affiliate of the Transmission Service Provider; or
    - iii. a Market Participant or an Affiliate of a Market Participant
  - i. has provided to the Authority a signed declaration in the in the form set forth in Annex II hereto.
- 15.1.2.6 The Authority may remove any member of the Dispute Resolution Panel from office if the member is convicted of a serious criminal offence or has committed a conduct involving serious moral turpitude, or the member is guilty of a conduct that prejudicially affects, or is perceived as likely to affect, his impartial status as a member of a Dispute Resolution Panel.
- 15.1.2.7 Each member of the Dispute Resolution Panel has, in relation to the arbitration or other resolution of a Dispute, the delegated authority to impose such penalties or make such other orders or directions as specified in these Market Commercial Code or the Grid Code, as may be applicable.
- 15.1.2.8 Notwithstanding any provision of this Code, no member of the Dispute Resolution Panel may, during the course of the arbitration or other resolution of a dispute:
- a. seek the assistance or use the services of any employee, member or officer of the Market Operator or the System Operator or a Transmission Service Provider or any other Market Participant without the express consent of the parties to the Dispute; or
  - b. request that an employee, member or officer of the Market Operator or the System Operator or a Transmission Service Provider or any other Market Participant to provide to him or her any documentation or information except on notice to all parties or for the purpose of securing evidence in a Dispute.

- 15.1.2.9 The members of the Dispute Resolution Panel shall be entitled to a fee for an arbitration conducted by them. The fee shall be payable at the rates specified by the Authority from time to time.

## **15.2 INTERPRETATION AND GENERAL PROCEDURAL PROVISIONS**

- 15.2.1.1 The provisions of this of this Chapter shall be liberally construed to secure the most expeditious, just and least expensive determination on its merits of every proceeding conducted hereunder.
- 15.2.1.2 Where no procedures are provided for in this Chapter of the Code, an Arbitrator may do whatever is reasonably necessary and permitted by the Applicable Law, Rules or Regulations to enable the effective adjudication of any matter before the Arbitrator.
- 15.2.1.3 The Counsellor shall from time to time Publish and notify the Market Participants of the address for service of the Counsellor.

## **15.3 APPLICATION**

- 15.3.1.1 The Dispute resolution regime provided for in this Chapter of the Code shall apply to:
- a. any dispute between the System Operator or the Market Operator or a Transmission Service Provider and any Market Participant which arises under or in connection with or in relation to this Code;
  - b. any order of denial by the Market Operator of authorisation to any person to register and participate in the CTBCM as to the order of denial of such authorisation;
  - c. a dispute between the System Operator or the Market Operator or a Transmission Service Provider and a Market Participant specified in this Code, as being subject to resolution pursuant to this Part;
  - d. a dispute between the System Operator and the Market Operator and a Market Participant regarding the terms or interpretation of any agreement, including the Market Participation Agreement or the Connection Agreement; and
  - e. a dispute between the System Operator and the Market Operator and a Market Participant or between Market Participants regarding the interpretation of this Chapter of the Code; and
  - f. Any other disputes between Market Participants where all of the Market Participants which are parties to the dispute consent in writing to the application thereof.
- 15.3.1.2 A Market Participant that has consented to the application of the Dispute resolution regime as per Clause f may, prior to the date on which a party to the Dispute issues a Notice of Dispute, withdraw its consent in the event that a Respondent to a counterclaim or crossclaim, other than such Market Participant, objects to the application of such regime.
- 15.3.1.3 The dispute resolution process provided for in this Chapter of the Code shall not apply to the following:

- a. any dispute relating to, connected with or arising out of an application by any person to amend a Clause or Condition of this Code or a Dispute relating to validity of an Amendment to this Code or the Grid Code;
- b. disputes with respect to a proposal to amend or not to amend any provision of this Code;
- c. disputes between the Market Operator and a Market Participant relating to the quantum of the Market Operator fee or, if it corresponds, to the System Operator fee, chargeable by the System Operator and the Market Operator to the Market Participant, unless the dispute relates to or is connected with the manner of calculation of the Market Operator or System Operator charge payable by the Market Participant in any given case; and
- d. an award of an Arbitrator.

15.3.1.4 A decision of an Arbitrator:

- a. shall be final and binding on the parties;
- b. shall be enforceable in accordance with the provision of the [Act or Regulation which regulates arbitrations in Pakistan]; and
- c. if not complied with, will constitute an Event of Default for the purposes of sub-Section 17.2.1.

15.3.1.5 Without limiting the generality of the foregoing, where any Dispute arises, the parties concerned shall comply with the procedures set forth in this Chapter of the Code and shall not make such Dispute a subject matter of any civil or other proceeding.

#### 15.4 CONTINUING OBLIGATIONS AND STAY OF ORDERS

15.4.1.1 Where a Dispute involves the payment or recovery of monetary amounts due under this Code, other than payment of a financial penalty, the amount shall be due and payable at the time specified for payment, notwithstanding initiation of a dispute resolution process whether under this Code or otherwise.

15.4.1.2 Where a Dispute involves the implementation of an order made or a direction given by the Market Operator under 16 of this Code, the obligation of the Market Participant to comply with the order or direction, shall be stayed until 15 days after the appointment of an Arbitrator, and thereafter for such period, if any, as may be determined by the Arbitrator.

15.4.1.3 Where a Dispute involves payment of a financial penalty imposed by the Market Operator on a Market Participant, the obligation to pay that financial penalty shall remain stayed until delivery of an award by the Arbitrator.

## 15.5 PROCEDURES FOR SETTLEMENT A DISPUTE

### 15.5.1 NEGOTIATION

15.5.1.1 The Parties to a Dispute shall, within the time specified in clause 15.5.1.2, make good faith efforts to negotiate and resolve any Dispute between them prior to filing a Notice of Dispute. Each person who is a party to a Dispute shall, to this end, designate an individual of sufficiently senior status in its organization, with authority to negotiate the matter in Dispute.

15.5.1.2 Parties to a Dispute shall commence the negotiation:

- a. where the Dispute involves an order, direction, instruction or other decision of the Market Operator, within 15 Business Days of the date of receipt of the order, direction, instruction or decision; and
- b. in all other cases, within 30 Business Days of:
  - i. The date on which the event that is the subject-matter of the dispute occurred; or
  - ii. the date on which the party initiating the negotiation became aware or, with the exercise of due diligence, ought to have become aware of the event that is the subject-matter of the Dispute,

whichever is later.

### 15.5.2 NOTICE OF DISPUTE AND RESPONSE

15.5.2.1 If the parties to a Dispute cannot resolve the Dispute within 20 Business Days, or such other period as the parties may agree, after commencing negotiations either party to the Dispute (the “Applicant for DR”) may:

- a. if applicable, immediately notify the other parties to the Dispute that negotiations are terminated (“Notice of Termination”); and
- b. Send a written notice of the Dispute (the “Notice of Dispute”) on any Respondent and shall file with the Counsellor a copy of the Notice of Dispute, together with proof of service of the Notice of Dispute on each Respondent.

15.5.2.2 A Notice of Dispute shall be filed within 20 Business Days of the date of issue or receipt, as the case may be, of the Notice of Termination to which the Dispute relates, or in case of Dispute related with the Final Settlement Statement, the date upon which such Final Settlement Statement is published by the Market Operator.

15.5.2.3 The Notice of Dispute shall be in such form as established by the Counsellor, shall be signed by a person with authority to bind the Applicant for DR and shall specify, in reasonable detail and to the best of the Applicant for DR’s knowledge:

- a. the nature of and basis for the complaint;
- b. the parties to the Dispute and the name of any person having knowledge of or who may be directly affected by the Dispute;
- c. a concise summary of the facts underlying the Dispute;
- d. the relief sought and a summary of the grounds for such relief; and

- e. any documentation upon which the Applicant for DR intends to rely in support of its complaint.
- 15.5.2.4 The Notice of Dispute shall be accompanied by a summary of the Notice of Dispute for publication in accordance with Clause a.
- 15.5.2.5 A Respondent shall, within 10 Business Days of service of a Notice of Dispute, serve a written Response (the “Response”) on the Applicant for DR and on any Respondent to a crossclaim identified in the Response, and shall file with the Counsellor a copy of the Response, together with proof of service of the Response on the Applicant for DR and on any such Respondent.
- 15.5.2.6 The Response shall be in such form as established by the Counsellor, shall be signed by a person with authority to bind the Respondent and shall specify, in reasonable detail and to the best of the Respondent’s knowledge:
- a. the information referred to in Clause 15.5.2.3, to the extent that the Respondent disagrees with the information relating thereto set forth in the Notice of Dispute;
  - b. a concise Response to the allegations made against the Respondent in the Notice of Dispute;
  - c. the relief sought, a summary of the grounds for such relief and, where the relief sought includes a counterclaim or crossclaim against the Applicant for DR to the Notice of Dispute or against any other Respondent, the information referred to in Clause 15.5.2.3 as it pertains specifically to such counterclaim or crossclaim; and
  - d. any documentation upon which the Respondent intends to rely in support of its Response, including as to any counterclaim or crossclaim, and which was not identified by the Applicant for DR.
- 15.5.2.7 The Response shall be accompanied by a summary of the Response for publication in accordance with Clause a
- 15.5.2.8 The Counsellor is entitled to reject and shall not take any further action with respect to a Notice of Dispute:
- a. that does not comply with the requirements indicated in Clause 15.5.2.3 or a Response that does not comply with the provision of Clause 15.5.2.6, provided that such rejection shall not prejudice the right of the Applicant for DR or the Respondent, as the case may be, to file a fresh Notice of Dispute or a Response, as the case may be within such time as the Counsellor may allow;
  - b. with respect to a Notice of Dispute in respect of which the negotiation referred to in Clause 15.5.1.115.5.1.2 was not commenced within the applicable time specified in Clause 15.5.1.2
- 15.5.2.9 Where the Counsellor rejects a Notice of Dispute or a Response, the Counsellor shall so notify the Applicant for DR and the Respondent who has filed the Response and shall provide written reasons for the rejection.
- 15.5.2.10 The Counsellor may accept a Notice of Dispute that does not comply with Clause 15.5.2.3 or a Response that does not comply with Clause 15.5.2.6 if all parties to the Dispute consent to the acceptance.



15.5.2.11 On receiving a valid Notice of Dispute and Response, the Counsellor shall notify the parties of such fact and request them to appoint the Arbitrators.

### 15.5.3 ARBITRATION

15.5.3.1 Each Dispute shall be referred to an Arbitration Tribunal of three Arbitrators, or where the parties agree, of one Arbitrator.

15.5.3.2 Within 5 Business Days of the receipt of a notice from the Counsellor, where the parties have not agreed for the Dispute to be resolved by a sole Arbitrator, each party to the Dispute shall appoint an Arbitrator from amongst the members of the Dispute Resolution Panel. The Counsellor shall appoint the third Arbitrator from amongst the members of the Dispute Resolution Panel.

15.5.3.3 Where the parties agree to the resolution of the Dispute by a sole Arbitrator, the parties shall appoint the sole Arbitrator from amongst the members of the Dispute Resolution Panel within 5 Business Days of receiving the notice from the Counsellor. If the parties to the Dispute fail to agree to an Arbitrator, the Counsellor shall appoint the sole Arbitrator from amongst the members of the Dispute Resolution Panel within 3 Business Days.

15.5.3.4 An Arbitrator shall be independent of the parties and shall act impartially. An Arbitrator who is or becomes aware of circumstances that may give rise to a reasonable apprehension of bias shall promptly disclose them to the Counsellor and the parties.

15.5.3.5 An Applicant for DR shall, within such period as may be allowed pursuant to Clause 15.5.3.9, serve on any Respondent, and file with the Arbitration Tribunal, a written statement containing its submissions on each issue in Dispute. At the same time, the Applicant for DR shall serve and file a list of all documents which it intends to file at the arbitration, copies of all such documents, and a list of witnesses intended to be called or to provide written evidence-in-chief at the hearing of the arbitration together with a concise written summary of the anticipated evidence of each witness. The Applicant for DR must indicate if legal counsel or some other representative will represent it and provide such person's name and address for service.

15.5.3.6 A Respondent shall, within such period as may be allowed pursuant to Clause 15.5.3.9, serve on an Applicant for DR and on any other Respondent, and file with the Arbitration Tribunal, a written statement containing its submissions on each issue in Dispute. At the same time, the Respondent shall serve and file a list of all documents which it intends to file at the arbitration, copies of all such documents, and a list of witnesses intended to be called or to provide written evidence-in-chief at the hearing of the arbitration together with a concise written summary of the anticipated evidence of each witness. A Respondent must indicate if legal counsel or some other representative will represent it and provide such person's name and address for service.

15.5.3.7 The Applicant for DR may, within such period as may be allowed pursuant to Clause 15.5.3.9, serve and file written submissions in reply.

- 15.5.3.8 Where a Respondent has made a counterclaim or a crossclaim in its Response, the Respondent shall be treated as an Applicant for DR and the Applicant for DR to the Notice of Dispute shall be treated as a Respondent in respect of the counterclaim or crossclaim. For the avoidance of doubt, a crossclaim can only be made against a party to the Dispute.
- 15.5.3.9 The Arbitration Tribunal shall fix a date, time and place for the following:
- a. the service filing of the Applicant for DR's materials and the counterclaim or crossclaim and reply to a Response; and
  - b. the service and filing of the Respondent's materials or, where applicable, the materials of a Respondent to the counterclaim or crossclaim, which date shall be no more than 60 days from the date of the service and filing, or such later date as may be agreed by each party to the arbitration. The Arbitration Tribunal shall file with the Counsellor a notice of the date, time and place so fixed.
- 15.5.3.10 A Market Participant who might be directly affected by the award of the Arbitration Tribunal in a Dispute may apply to the Arbitration Tribunal, on notice to the parties to the Dispute in question, no less than 5 Business Days prior to the date of the hearing, for leave to be impleaded as a party to the Dispute or to intervene at the hearing. Parties to the Dispute may make submissions on such application. The Arbitration Tribunal may, in its sole discretion, grant leave to the Market Participant to be impleaded as a party or to intervene if it demonstrates that it has an interest in the subject matter of the arbitration and may be directly affected by the decision in the arbitration. The Arbitration Tribunal may impose such terms and subject such Market Participant to such rights of participation as the Arbitration Tribunal considers reasonable.
- 15.5.3.11 The procedures governing the arbitration shall be determined by the Arbitration Tribunal, except as expressly provided for in this Chapter of the Market Commercial Code.
- 15.5.3.12 Any party to a Dispute may apply to the Arbitration Tribunal for, and the Arbitration Tribunal may order, such further and other production of materials as the Arbitration Tribunal sees fit, provided that the Arbitration Tribunal may not order the production by the System Operator or the Market Operator of any Confidential Information which relates to a person who is not a party to the Dispute. The Arbitration Tribunal may admit evidence even if not admissible as evidence in a court of law.
- 15.5.3.13 The Arbitration Tribunal may request an agent, employee, officer or director of a party to the Dispute, to provide him or her with any information or documentation which is not Confidential Information and which the Arbitration Tribunal considers relevant to the conduct of the arbitration, and the Arbitrator shall provide any such information or documentation to the parties in advance of the hearing at which such information or documentation is to be considered.

- 15.5.3.14 The Arbitration Tribunal may request an agent, employee, officer or director of a party to the Dispute, to provide it with any information or documentation pertaining to such party which is Confidential Information and which the Arbitration Tribunal considers relevant to the conduct of the arbitration, and the Arbitration Tribunal shall not provide any such information or documentation to the parties in advance of the hearing at which such information or documentation is to be considered. Such Confidential Information disclosed to the Arbitration Tribunal shall be kept by the Counsellor in a sealed cover in safe custody and should not be disclosed by the Arbitrators to any person except with the consent of the party to whom it pertains or on direction of the Authority or a superior judicial authority.
- 15.5.3.15 Whenever considered necessary, the Arbitration Tribunal may, upon notice to the parties, obtain expert advice concerning technical aspects of the Dispute. Arrangements for obtaining such advice shall be made by the Arbitration Tribunal or a party, provided that where such arrangements are made by the Arbitration Tribunal, the Arbitration Tribunal shall provide to the parties advance notice of the identity of the expert advisor.
- 15.5.3.16 At the hearing, the Applicant for DR shall provide its case in chief, followed by the Respondent in Response, and then the Applicant for DR in reply.
- 15.5.3.17 Witnesses shall be examined under oath or affirmation and shall be made available for cross-examination. Nothing in this clause shall preclude the Arbitrator from dispensing with the oral examination-in-chief of a witness provided that a written statement of the witness's evidence is provided in such form as the Arbitrator determines appropriate.
- 15.5.3.18 The arbitration shall be open to the public and, except for Confidential Information, all documents filed will form part of the public record of the proceedings.
- 15.5.3.19 The Arbitration Tribunal shall deliver its award in writing, with reasons, within 30 days of completion of the hearing or within such longer period as may be agreed by each party to the Dispute. Where the Arbitration Tribunal has three Arbitrators, all decisions, including the final award, shall be made by the majority of Arbitrators.
- 15.5.3.20 The Arbitration Tribunal shall immediately file a copy of its award with the Counsellor along with a brief summary of it.
- 15.5.3.21 Where, in the case of a Dispute, the Arbitration Tribunal concludes that a Market Participant has violated a provision of this Code or the Grid Code, as the case may be, the Arbitration Tribunal may in the award approve or modify a financial penalty, if any imposed, by the Market Operator or the System Operator, assess such damages or make such further and other orders or directions as the Arbitration Tribunal considers just and reasonable, provided that:
- a. the financial penalty imposed on the Market Participant shall not be approved in whole or in part unless the Arbitration Tribunal determines that the breach of this Code or the Grid Code, as the case may be, could have been avoided by the exercise of due diligence by the Market Participant or that the Market Participant acted intentionally; and
  - b. in approving or modifying the amount of the financial penalty, the Arbitration Tribunal shall have regard to the criteria set forth in Clause .17.3.1.7

- 15.5.3.22 Where, in the case of a Dispute referred to in Clause a, the Arbitration Tribunal concludes that the System Operator or the Market Operator has violated, misinterpreted or misapplied a Clause or a provision, the Arbitrator may assess such damages not exceeding those claimed or make such further and other orders or directions as the Arbitration Tribunal considers just and reasonable. Without limiting the generality of the foregoing, the Arbitration Tribunal shall direct the System Operator or the Market Operator to comply with this Code and/or the Grid Code, as the case may be, or to interpret or apply this Code and/or Grid Code, as the case may be, in a particular manner.
- 15.5.3.23 In the case of a Dispute referred to in Clause d, in addition to the applicable orders referred to in Clauses 15.5.3.25 or 15.5.3.27 as the case may be, assess such damages or make such further and other orders or directions as the Arbitrator considers just and reasonable.
- 15.5.3.24 Where a Dispute relates to the terms and conditions upon which the Market Operator has authorised a person to participate in the CTBCM, the Arbitration Tribunal may confirm the order of the Market Operator or set aside the order of the Market Operator and order the Market Operator to authorize the person to participate in the CTBCM on such other terms and conditions, if any, which the Arbitration Tribunal determines are just and reasonable provided that the terms and conditions determined by the Arbitration Tribunal should be consistent with this Code and the Grid Code and should be non-discriminatory.
- 15.5.3.25 The Arbitration Tribunal may:
- a. in the case of a Dispute referred to in Clause b, confirm the order of the Market Operator or set aside the order of the Market Operator and order the Market Operator to authorize the person to participate in the CTBCM, on such terms and conditions, if any, which the Arbitration Tribunal determines are just and reasonable, provided that no award shall be made for payment of any damages to the Admission Applicant for DR whose Admission Application is found to have been wrongly rejected by the Market Operator and provided further that, the terms and conditions determined by the Arbitration Tribunal should be consistent with this Code and should be non-discriminatory;
  - b. in the case of a Dispute referred to in Clauses d to f make such orders or directions as the Arbitration Tribunal considers just and reasonable.
- 15.5.3.26 The Arbitration Tribunal may make such award as to costs in relation to conducting the arbitration proceedings as he or she determines just and reasonable, provided that, except in exceptional cases:
- a. where in the context of a Dispute the award consists of damages for breach of this Code or the Grid Code, costs, including the Costs of the Arbitration incurred by the successful party, shall be awarded to the successful party;
  - b. where the award consists of the imposition of financial penalties on a Market Participant, costs, including the Costs of the Arbitration, shall be awarded to the Market Operator; and
  - c. where the award consists of the direction to the System Operator and the Market Operator to comply with this Code and/or the Grid Code or to interpret or apply a Rule or Condition in a particular manner, costs, including the Costs of the Arbitration incurred by the Market Participant, shall be awarded to the Market Participant seeking the direction.

15.5.3.27 Where:

- a. the award consists of a determination by the Arbitration Tribunal that the Applicant for DR is not entitled to any compensation; or
- b. no award as to costs is made pursuant to Clause 15.5.3.26

the Applicant for DR shall be responsible for his or her own costs and legal expenses associated with his or her participation in the arbitration and, subject to any determination shall bear the Costs of the Arbitration.

15.5.3.28 Where an award consists of a determination by the Arbitration Tribunal that the Applicant for DR is entitled to compensation, the Arbitration Tribunal may determine that some or all of:

- a. the Applicant for DR's costs and legal expenses associated with his or her participation in the arbitration; and
- b. the Applicant for DR's share of the Costs of the Arbitration,

be recovered by the Applicant for DR. Where the Arbitration Tribunal makes such an award as to costs, the amount of such recoverable costs shall be paid by the System Operator or the Market Operator or the Transmission Service Provider and/or other Market Participant, as the case may be.

15.5.3.29 A person who intervenes in an arbitration shall be responsible for his or her own costs and legal expenses associated with his or her participation in the arbitration.

15.5.3.30 Upon completion of an arbitration, the Arbitration Tribunal shall file the record of the arbitration proceedings with the Counsellor. Where such record contains Confidential Information in respect of which a claim for confidentiality has been confirmed by the Arbitrator, the Confidential Information, together with the recording of any in camera hearings relating thereto, shall be sealed in an envelope clearly marked "CONFIDENTIAL" or otherwise identified as confidential and protected from disclosure prior to filing with the Counsellor.

15.5.3.31 Upon completion of the arbitration, the Arbitration Tribunal shall file with the Counsellor an invoice containing an itemized statement of the Costs of the Arbitration and an allocation of the Costs of the Arbitration between the parties to the Dispute the subject of the invoice, together with copies of all bills and other supporting documentation relating thereto.

15.5.3.32 Upon receipt of such invoice, the Counsellor shall submit a copy of the invoice to the parties to the Dispute in respect of their respective shares of the Costs of the Arbitration. Each such party who is liable to pay such costs shall, within ten [10] Business Days of receipt of such invoice, pay to the Counsellor the amount owing thereunder.

#### 15.5.4 CONFIDENTIALITY

- 15.5.4.1 Any party may claim that a document, or information contained in a document, to be produced in the context of the arbitration of a Dispute is Confidential Information. The party making such a claim shall provide to the Arbitrator in writing the basis for its assertion. If the claim of confidentiality is confirmed by the Arbitration Tribunal, the Arbitration Tribunal shall establish requirements for the protection of such document or information as may be necessary to protect the confidentiality and commercial value of such document or information, including requirements for disclosure of same only to counsel and/or other independent advisor who has filed an undertaking as to confidentiality satisfactory to the Arbitration Tribunal and for in camera hearings at which only representatives of the disclosing party and such counsel and/or other independent advisor may be present.
- 15.5.4.2 Members of the Dispute Resolution Panel shall enter into such confidentiality agreement as may be required by the Authority.

#### 15.5.5 RECORD-KEEPING AND PUBLICATION

- 15.5.5.1 The Counsellor shall maintain a record of all dispute resolution proceedings conducted. The Counsellor shall be responsible for ensuring that all measures are taken to prohibit access by any other person to any portion of such record which may be sealed and marked “CONFIDENTIAL” or otherwise identified as being confidential, except as may be required by Applicable Law.
- 15.5.5.2 The Counsellor shall, unless objected to by any party and if so, then with the approval of the Arbitration Tribunal, arrange for Publication on the Market Operator’s website of the following:
- a. the summaries referred to in Clauses 15.5.2.4 and 15.5.2.8;
  - b. notice of the appointment of the Arbitration Tribunal and the address for service on the Arbitration Tribunal;
  - c. notice of the date, time and place fixed for hearing pursuant to Clause 15.5.3.9; and
  - d. a summary of the award of the Arbitration Tribunal.

#### 15.5.6 AUDIT

The activities of the Dispute Resolution Panel shall be audited in accordance with procedures adopted from time to time by the Authority.

## 16. MARKET SURVEILLANCE

### 16.1 MARKET SURVEILLANCE PANEL

#### 16.1.1 CREATION OF THE MARKET SURVEILLANCE PANEL

16.1.1.1 The Market Operator board shall constitute a Market Surveillance Panel, to investigate any activity related to the CTBCM or the conduct of a Market Participant or a Service Provider and to report thereon to the Market Operator board, and if consider it appropriate, also to the Authority as specified in this Chapter of the Market Commercial Code, including without limitation issuing recommendations relating to, among other, the following:

- a. Monitor behaviour of Market Participants including withholding or abuse in costs, abuse or possible abuse of market power;
- b. monitor the efficiency of this Code and the market design, to identify and correct as early as possible flaws, and propose mechanisms to solve or mitigate any problem in this Code or its implementation;
- c. Review of proposals on amendments to this Code;
- d. Monitor efficiency and non-discrimination of System Operator and Market Operator; and
- e. Monitor development of competition and market efficiency.

#### 16.1.2 COMPOSITION AND TERM

16.1.2.1 The Market Surveillance Panel shall consist of three [3] qualified persons. The quorum for the transaction of business at any meeting of the Market Surveillance Panel shall be two. At all meetings of the Market Surveillance Panel every question shall be decided by a majority of the votes cast on the question. In the case of an equality of votes, the chairperson of the Market Surveillance Panel will be entitled to a second or casting vote. Where there is a vacancy or vacancies in the Market Surveillance Panel, the remaining members may exercise all the powers of the Market Surveillance Panel so long as a quorum of the Market Surveillance Panel remains in office.

16.1.2.2 Members of the Market Surveillance Panel shall serve for a term of five years. A member of the Market Surveillance Panel whose term has expired may be re-appointed by the Market Operator board for a term of five years, provided that no person may serve on the Market Surveillance Panel for more than two terms.

16.1.2.3 Members of the Market Surveillance Panel must,

- a. have recognized expertise in the operation of competitive electricity markets;
- b. not have a spouse or relative that is a director, officer, employee or agent of:
  - i. a Market Participant or an Affiliate of a Market Participant; or
  - ii. a Licensee or an Affiliate of a Licensee;
- c. not have a spouse or relative that has a, direct or indirect legal or beneficial interest in, or commercial affiliation with:

- i. a Market Participant or an Affiliate of a Market Participant; or
    - ii. a Licensee or an Affiliate of a Licensee;
  - d. have provided to the Market Operator board a signed declaration in the in the form set forth in Annex III hereto.
- 16.1.2.4 The Market Operator board shall from time to time appoint a chairperson from among the members of the Market Surveillance Panel.
- 16.1.2.5 The Market Surveillance Panel may, with the permission of the Market Operator board, engage consultants with expertise in collecting and analysing the information pertaining to market behaviour of the Market Participants, Service Providers , the System Operator and the Market Operator.

### **16.1.3 REPORTING**

- 16.1.3.1 The Market Surveillance Panel shall submit reports to the Market Operator board and, if it considers appropriate, to the Authority and such other persons as may be specified in this 16 of the Market Commercial Code, upon completion of any investigation.
- 16.1.3.2 Subject to Clause 16.1.3.3, all reports prepared by the Market Surveillance Panel shall be made on a confidential basis to the Authority. A report of the Market Surveillance Panel made upon completion of an investigation relating to the conduct of a Market Participant shall be provided to the involved Market Participant and to the Market Operator.
- 16.1.3.3 The Market Operator and, if it corresponds, the Authority shall make available, for public inspection during its normal business hours at its offices, a copy of each report prepared by the Market Surveillance Panel, subject to editing any portions thereof to remove any confidential or commercially sensitive information pertaining to a person or Market Participant.

## **16.2 MONITORING AND INVESTIGATIONS**

### **16.2.1 MARKET MONITORING FUNCTIONS.**

- 16.2.1.1 The Market Surveillance Panel shall monitor, evaluate and analyse the conduct of Market Participants, Service Provider, the System Operator and the Market Operator and the structure and performance of, and activities in, the CTBCM including, but not limited to:
  - a. inappropriate or anomalous market conduct, including unilateral or interdependent behaviour resulting in abuses or possible abuses of market power and gaming;
  - b. identify actual or potential design flaws or inefficiencies in this Code or the Grid Code or in the Commercial Code Operational Procedures; and
  - c. actual or potential design flaws in the overall structure of the CTBCM and assess whether any one or more specific aspects of the underlying structure of the CTBCM is consistent with the efficient and fair operation of a competitive market; and



- d. such other matters as the Market Operator board or the Authority may direct in discharge of its functions under Act and Applicable Documents.
- 16.2.1.2 The Market Surveillance Panel shall, with the approval of the Market Operator board, develop an information requirements system and criteria for evaluation that will enable it to effectively carry out the monitoring function referred to in Clause 16.2.1.1. To this end, the Market Surveillance Panel will develop:
- a. a detailed catalogue of all of the data and/or categories of data it will have the need for or means of acquiring directly from Market Participants; and
  - b. a catalogue of the monitoring indicators that it will use to evaluate and analyse the data so acquired.
- These catalogues shall be Published by the Market Surveillance Panel.
- 16.2.1.3 The Market Surveillance Panel may request that a Market Participant provides it with information, other than that referred to in the catalogue developed under Clause a if the Market Surveillance Panel needs such information to enable it to perform its activities.
- 16.2.1.4 The Market Surveillance Panel shall establish procedures it will use to handle the data it will have the need or means of acquiring and creating, including procedures for protecting Confidential Information.
- 16.2.1.5 The Market Surveillance Panel shall not disclose to a Market Participant Confidential Information pertaining to any other Market Participant and acquired by the Market Surveillance Panel for the purpose of carrying out its monitoring functions.
- 16.2.1.6 Market Participants must provide the Market Surveillance Panel with the data:
- a. referred to in the catalogue described in Clause a once published by the Market Surveillance Panel; and
  - b. requested by the Market Surveillance Panel pursuant to Clause 16.2.1.3.
- 16.2.1.7 The catalogues in Clause a and Clause b shall be the subject of such re-evaluation and refinement by the Market Surveillance Panel, as the Market Surveillance Panel deems appropriate, subject to approval of the Market Operator board. Any revision to such catalogues shall be Published.
- 16.2.1.8 Nothing in this Chapter of the Market Commercial Code shall preclude the Market Surveillance Panel from conducting such monitoring, evaluation, or analysis as it determines appropriate at any given time.
- 16.2.1.9 The Market Surveillance Panel shall, no less than annually and more frequently if so requested by the Market Operator board or the Authority, prepare routine reports on matters pertaining to its responsibilities pursuant to this Chapter of the Code, including a summary of all complaints or referrals filed and investigations commenced under sub-Section 16.2.2. Such reports shall contain the Market Surveillance Panel's general assessment as to the state of competition within, and the efficiency of, the CTBCM.

- 16.2.1.10 The Market Surveillance Panel may, from time to time, in its discretion, consult with Market Participants in relation to the activities identified in Clause 16.2; provided, however, that no Confidential Information shall be disclosed to any Market Participant without the prior concurrence of all other Market Participants to whom the Confidential Information relates.
- 16.2.1.11 Where the Market Surveillance Panel, in carrying out its responsibilities, identifies that:
- a. a Market Participant is or may be acting contrary to or may not be in compliance with statutory authority falling within the jurisdiction of a person, board, agency or tribunal including, but not limited to, the Authority; or
  - b. identifies that a Market Participant is or may be breaching or violating a provision of this Code or the Grid Code, or
  - c. that an Amendment to this Code and/or the Grid Code may be required,
- the Market Surveillance Panel shall prepare and submit a report to that effect to the Market Operator board. If the report recommends an Amendment to this Code and/or the Grid Code, a copy of such report shall be sent to the Market Commercial Code Review Panel. If the report identifies a breach committed or that might be or might have been committed by a Market Participant, a copy of such report shall be sent to the concerned Market Participant.

## 16.2.2 INVESTIGATIONS

- 16.2.2.1 The Market Surveillance Panel may conduct an investigation into any activities in the CTBCM and the conduct of a Market Participant identified as a result of the activities conducted under Clause a.
- 16.2.2.2 The Market Surveillance Panel may conduct an investigation into actual or potential design or other flaws and inefficiencies in this Code, the Grid Code and other Commercial Code Operational Procedures, of the Market Operator or the System Operator, identified as a result of its activities under Clause b.
- 16.2.2.3 The Market Surveillance Panel may conduct an investigation into actual or potential design or other flaws in any one or more specific aspects of the underlying structure of the CTBCM identified as a result of its activities under Clause c
- 16.2.2.4 Any person, other than the Authority, wishing the Market Surveillance Panel to conduct an investigation into any matter referred to in Clause 16.2.1.1, or any board, agency or tribunal wishing to refer any such matter to the Market Surveillance Panel for investigation, shall make a complaint or referral in writing setting out:
- a. the name and address of the complainant or person referring the matter;
  - b. the particulars of the complaint or referral;
  - c. any information or facts supporting the complaint or referral; and
  - d. the signature of the person making the complaint or referral or, where that person is not an individual, the signature of a duly authorised officer or duly authorised representative of the person.

- 16.2.2.5 The Market Surveillance Panel may refuse to commence an investigation into any matter referred to it pursuant to Clause 16.2.2.4 where, in its sole discretion, it is of the view that an investigation is not warranted and shall have, where an investigation is commenced, the right to terminate such investigation, if it determines that the complaint or referral is:
- a. frivolous, vexatious, otherwise not material or was not or is no longer warranted;
  - b. within the exclusive jurisdiction of another person, board, agency or tribunal; or
  - c. the person making the complaint or referral fails to provide the information pursuant to Clause 16.2.2.6 within the timeframe specified by the Market Surveillance Panel,
- in which case the Market Surveillance Panel shall prepare and deliver a report to the Market Operator board and, if it considers appropriate, to the Authority and shall so advise the person who filed the complaint or made the referral.
- 16.2.2.6 The Market Surveillance Panel may, prior to making a decision pursuant to Clause 16.2.2.5, request that the person making the complaint or referral provide additional information relating thereto within such time as may be specified by the Market Surveillance Panel.
- 16.2.2.7 The Market Surveillance Panel shall, upon determining that there is a prima facie case in respect of the conduct of a Market Participant subject to a complaint or referral, inform the Market Participant who is the subject of the complaint or referral that the Market Participant is the subject of an investigation and shall inform the Market Participant of the outcome of the investigation. On the written request of the person making the complaint or referral, the Market Surveillance Panel shall inform that person of the outcome of the investigation.
- 16.2.2.8 For the purposes of carrying out an investigation, the Market Surveillance Panel may request any Market Participant and the person who made the complaint or referral that resulted in the investigation to provide information in accordance with Clause 16.2.2.9 and 16.2.2.10.
- 16.2.2.9 A request for information pursuant to Clause 16.2.2.8 shall:
- a. be in writing;
  - b. specify the information requested; and
  - c. specify a time that the Market Surveillance Panel considers to be reasonable within which the information is to be provided to the Market Surveillance Panel.
- 16.2.2.10 Information provided to the Market Surveillance Panel pursuant to a request made shall, if the Market Surveillance Panel so requires, be certified under oath or statutory declaration by the person to whom the request is directed or, in the case of a person who is not an individual, duly authorised officer or duly authorised representative thereof, as being correct and complete to the best of that person's knowledge.
- 16.2.2.11 A Market Participant shall respond and cause its Affiliate in possession of any information required by the Market Surveillance Panel, to respond to a request from the Market Surveillance Panel for information and must provide the Market Surveillance Panel with the information so requested.

- 16.2.2.12 Where a Market Participant or an Affiliate of a Market Participant fails to respond to or refuses a request for information, the Market Surveillance Panel may apply to the Authority for an order to secure compliance with its request and the Market Participant and the Market Surveillance Panel shall abide by the decision of the Authority.
- 16.2.2.13 On completion of an investigation, the Market Surveillance Panel shall prepare and submit to the Market Operator board and, if it considers appropriate, to the Authority a written report that sets out, among other information:
- a. the matter that was investigated;
  - b. whether the matter came to the attention of the Market Surveillance Panel by way of a referral or complaint or whether the Market Surveillance Panel decided on its own initiative to investigate the matter;
  - c. the findings of the Market Surveillance Panel including, without limitation, and where appropriate, that it was unable to reach firm conclusions on the matter investigated and the reasons for such inability;
  - d. where the findings of the Market Surveillance Panel include findings to the effect that a Market Participant, Service Provider, the System Operator or the Market Operator has engaged in inappropriate conduct, any response provided by the Market Participant to such findings; and
  - e. the recommendations, if any, of the Market Surveillance Panel and the reasons for the recommendations.
- 16.2.2.14 Where the Market Surveillance Panel makes a determination, pursuant to Clause 16.2.2.5, either not to commence or to terminate an investigation, it shall prepare and submit to the Market Operator board, and, if considers appropriate, to the Authority a report that sets out:
- a. the nature of the complaint or referral; and
  - b. the reasons for which the Market Surveillance Panel determined that no investigation was warranted or that the investigation should be Terminated, as the case may be.
- 16.2.2.15 The Authority may approve, modify or reject the decision of the Market Surveillance Panel and may direct, where appropriate, the Market Surveillance Panel to undertake or continue such investigation. When so directed, the Market Surveillance Panel shall abide by the Authority decision.
- 16.2.2.16 Where the Market Surveillance Panel intends to include in a report findings to the effect that a Market Participant has engaged in inappropriate conduct including, but not limited to, a breach of this Code and/or the Grid Code, it must discuss its findings with the Market Participant before including the findings in the report, and must give the Market Participant a reasonable opportunity to respond in writing to the allegations. Where the Market Participant has not made any response within a reasonable time specified by the Market Surveillance Panel, the Market Participant shall be deemed to have elected to make no response.
- 16.2.2.17 Where the Market Surveillance Panel determines that action is urgently required in respect of the matters which are revealed during the course of an investigation, the Market Surveillance Panel may make an interim report to that effect to the Market Operator board and, if it considers appropriate, to the Authority containing the applicable recommendations.

### 16.2.3 DISPUTE RESOLUTION AND OTHER RELIEF

16.2.3.1 The dispute resolution procedures under 15 of this Code shall not apply to the activities of the Market Surveillance Panel.

### 16.2.4 PUBLICATION AND PROVISION OF DATA

16.2.4.1 Market Participants may request that the Market Surveillance Panel provide data which is not Confidential Information collected or created in the course of the monitoring activities described in sub-Sections 16.2 or sub-Section 16.2.2 and which is not otherwise required to be Published by the Market Surveillance Panel or the System Operator or the Market Operator pursuant to these Market Commercial Code or the Grid Code. Such data may be provided unless, in the opinion of the Market Surveillance Panel, such disclosure is reasonably likely to compromise the work of the Market Surveillance Panel. Where the provision of data imposes a significant burden or expense on a Market Surveillance Panel, the data may be provided on payment of a reasonable fee.

### 16.2.5 AUDIT

16.2.5.1 The activities of the Market Surveillance Panel shall be audited in accordance with procedures adopted from time to time by the Market Operator board.

## 17. ENFORCEMENT

### 17.1 COMPLIANCE AND BREACHES

#### 17.1.1 COMPLIANCE

- 17.1.1.1 The System Operator and the Market Operator shall comply with the Market Rules, this Code and the Grid Code.
- 17.1.1.2 The Market Operator shall ensure compliance to this Code by all Market Participants and Service Providers
- 17.1.1.3 The System Operator shall ensure compliance to the Grid Code by all Market Participants and Service Providers. If the System Operator has evidence that a Market Participant or a Service Provider has violated or is violating provisions of the Grid Code, the System Operator shall file a complaint with the Market Operator.
- 17.1.1.4 Any Market Participant that has evidence that another Market Participant or a Service Provider has violated or is violating provisions of this Code or the Grid Code may file a complaint with the Market Operator.
- 17.1.1.5 Any Market Participant or Service Provider which has evidence that the System Operator or the Market Operator has violated or is violating provisions of this Code or the Grid Code, may file a complaint to the Market Surveillance Panel. The Market Surveillance Panel shall meet and discuss the matter with the System Operator or the Market Operator. If the Market Surveillance Panel is not satisfied with the response of the System Operator or the Market Operator, the Market Surveillance Panel shall document the charges against the System Operator or the Market Operator and present the breach to the Authority.

#### 17.1.2 PROCEDURES CONCERNING ALLEGED BREACHES OF THIS CODE

- 17.1.2.1 Where this Code provides for consequences or sanctions in respect of a breach by a Market Participant or Service Provider of a particular Clause or provision, those consequences or sanctions shall apply in the circumstances and in the manner provided for in the relevant Clauses or provisions, in addition to such sanctions as may be imposed pursuant to sub-Section 17.3.1.
- 17.1.2.2 In case the Market Operator considers, on the basis of its own information or upon receipt of written information from any person, that a Market Participant may have breached or may be breaching any provision of this Code, other than a breach constituting an Event of Default (as per sub-Section 17.2.1), and that in the circumstances and if the breach is established, it may be appropriate that an enforcement action would be taken against that Market Participant, the Market Operator shall notify the Market Participant of:
  - a. details of the alleged breach and of the time within which the breach must be remedied;
  - b. details of the evidence on the basis of which the Market Operator considers that the Market Participant may have breached or may be breaching this Code and/or the Grid Code, as the case may be;
  - c. details of the sanctions which may be imposed if the breach is established;

- d. the time within which the Market Participant may make written representations in response to the allegations; and
  - e. the right of the Market Participant to request a meeting with the Market Operator to discuss the matter.
- 17.1.2.3 Following expiry of the time specified pursuant to Clause d, and after consideration of any representations made by the Market Participant, the Market Operator may:
- a. determine that the Participant has not breached this Code or the Grid Code, as the case may be;
  - b. determine that the Market Participant is in breach of this Code and/or the Grid Code, as the case may be;
  - c. request that the Market Participant provide further information in relation to the alleged breach; or
  - d. conduct such further investigation into the matter as the Market Operator determines appropriate.
- 17.1.2.4 Where the Market Participant has requested a meeting pursuant to Clause e, the Market Operator shall provide the Market Participant with a reasonable opportunity to meet with the Market Operator to discuss the allegations. In such case, the Market Operator shall not make a determination until such reasonable opportunity has been given and shall take into consideration the submission made by the Market Participant during such meeting.
- 17.1.2.5 A Market Participant shall comply with any request for information made by the Market Operator pursuant to Clause c.
- 17.1.2.6 Where the Market Operator determines that a Market Participant has breached this Code and/or the Grid Code, as the case may be, the Market Operator may order the Market Participant breaching this Code and/or the Grid Code, as the case may be, to do any one or more of the following:
- a. direct the Market Participant to do, within a specified period, such things as may be necessary to comply with this Code and/or the Grid Code, as the case may be;
  - b. direct the Market Participant to cease, within a specified period, the act, activity or practice constituting the breach;
  - c. impose additional or more stringent record-keeping or reporting requirements on the Market Participant;
  - d. issue a non-compliance letter in accordance with sub-Section 17.3;
  - e. impose financial penalties in accordance with sub-Section 17.3, provided that no such penalties shall be imposed unless the Market Operator is satisfied that the breach could have been avoided by the exercise of due diligence by the Market Participant or that the Market Participant acted intentionally; or
  - f. take such other action as may be provided for in this Code or the Grid Code in respect of the provisions that has been breached by the Market Participant.
- 17.1.2.7 An order of the Market Operator pursuant to Clause 17.1.2.6 shall be effective from the [sixteenth] Business Day following the receipt of the order by the Market Participant.

- 17.1.2.8 A Market Participant shall comply with an order of the Market Operator made pursuant to Clause 17.1.2.6 as soon as the order is effective pursuant to Clause 17.1.2.7

## **17.2 SUSPENSION AND TERMINATION ORDERS**

### **17.2.1 EVENT OF DEFAULT**

- 17.2.1.1 Each of the following is an Event of Default in relation to a Market Participant and, if it corresponds, to a Service Provider:
- a. the Market Participant fails to comply with an order of the Market Operator made pursuant to Clause 17.1.2.6 once the order has become effective.
  - b. a Market Participant fails to comply with an award of an Arbitrator filed under Sub-Section 15.5, unless such award has been stayed or not recognized for enforcement by a court of competent jurisdiction;
  - c. the Market Operator does not receive payment in full of any amount claimed by the Market Operator under any Security Cover in respect of the Market Participant within [one Business Day] in the jurisdiction of the Market Participant after the due time for payment of that claim;
  - d. the Market Participant fails to renew the Security Cover required to be supplied under 14 of this Market Commercial code within the time specified by the Market Operator;
  - e. it becomes unlawful for the Market Participant to comply with any of its obligations under this Code or the Grid Code, as the case may be, or any other obligation owed to the Market Operator or it is claimed to have become so by the Market Participant;
  - f. a licence, including a Licence from the Authority pursuant to the Act, permit or other authorization necessary to enable the Market Participant to conduct its business or activities is suspended, revoked or otherwise ceases to be in full force and effect, provided that where a Market Participant holds more than one licence and only one such licence has been suspended, revoked or otherwise ceases to be in full force and effect, the Event of Default and any action taken by the Market Operator with respect thereto shall relate only to such licence;
  - g. the Market Participant ceases or threatens to cease to carry on its Licensed activity or a substantial part of its Licensed activity;
  - h. the Market Participant enters into or takes any action to enter into an arrangement, composition or compromise with, or an assignment for the benefit of, all or any class of their respective creditors or members, or a moratorium involving any of them;
  - i. the Market Participant states that it is unable to pay from its own money its debts when they fall due for payment;
  - j. a receiver or person having a similar or analogous function under the laws of any relevant jurisdiction is appointed in respect of any property of the Market Participant which is used in or relevant to the performance by the Market Participant of its obligations under this Code, the Grid Code or its Licence;



- k. an administrator, liquidator, trustee in bankruptcy or person having a similar or analogous function under the laws of any relevant jurisdiction is appointed in respect of the Market Participant, or any action is taken to appoint such person;
  - l. an application is made for the winding up or dissolution or a resolution is passed or any steps are taken to pass a resolution for the winding up or dissolution of the Market Participant;
  - m. the Market Participant is wound up or dissolved, unless the notice of winding up or dissolution is discharged;
  - n. the Market Participant is taken to be insolvent or unable to pay its debts under any applicable legislation;
  - o. the Market Participant ceases to satisfy any material requirement imposed upon it as a condition of its authorization to participate in the CTBCM;
  - p. the Market Participant fails to inform the Market Operator of a material change in the information contained in its Admission Application or then current information on matters specified in the Admission Application pursuant Sub-section 3.3.2; or
  - q. the Market Participant persistently commits breach of this Code or the Grid Code.
- 17.2.1.2 A Market Participant shall notify the Market Operator immediately upon becoming aware of any circumstance that may give rise to or of the occurrence of an Event of Default.
- 17.2.1.3 Where an Event of Default has occurred in relation to a Market Participant, the Market Operator shall:
- a. issue to the Market Participant a Default Notice specifying the alleged default and requiring the Market Participant to remedy the default within such time as may be specified in the Default Notice, which time shall not be more than:
    - i. 5 days; or
    - ii. 2 Business Days,
 whichever is longer; and/or
  - b. make claim upon any Security Cover held in respect of the obligations of the Market Participant for such amount as the Market Operator determines represents the amount of any money actually or contingently owing by the Market Participant to the Market Operator under this Code.
- 17.2.1.4 Where the Market Operator issues a Default Notice to a Market Participant in respect of an Event of Default, the Market Operator shall notify the Authority, and the Transmission or Distribution Network Service Provider, where the Market Participant is connected:
- a. of the issuance of the Default Notice;
  - b. of the time within which the Market Participant may remedy the default as specified in the Default Notice; and
  - c. where applicable, once the default specified in the Default Notice has been remedied by the Market Participant.

- 17.2.1.5 A Market Participant may remedy an Event of Default, where the Default Notice relates to payment of amounts due to the Market Operator under this Code, including Clauses b to d and h to n, as follows:
- a. by paying all monies due for payment by it under this Code, together with any default interest calculated in accordance with any Payment Notification issued by the Market Operator and any costs and expenses determined by the Market Operator to have been incurred by it by reason of the default; and
  - b. by providing additional Security Cover which complies with the requirements of 14 of this Code.
- 17.2.1.6 Notwithstanding that the Event of Default may have been remedied by the Market Participant, the Market Operator may, where it considers that it is in the interest of preserving the integrity of the CTBCM, impose such conditions on the authorization of a Market Participant to participate in the Energy or Capacity Balancing Mechanisms as the Market Operator determines appropriate.

## 17.2.2 SUSPENSION ORDERS AND DISCONNECTION ORDERS

- 17.2.2.1 If an Event of Default is not remedied within the time specified in the Default Notice or within such longer period as may be agreed to in writing by the Market Operator, the Market Operator may issue to the Market Participant a notice indicating the Market Operator's intention to issue:
- a. a Suspension Order to the Market Participant suspending or restricting all or any of the Market Participant's rights to participate in the CTBCM; and/or
  - b. a Disconnection Order to the Transmission or Distribution Network Service Provider to which Transmission Network or Distribution Network the Market Participant is connected, directing the Disconnection of the relevant Facilities or equipment of the Suspended Market Participant,
- and shall provide a copy of such notice to such Transmission or Distribution Network Service Provider.
- 17.2.2.2 Pursuant to the notice referred to in Clause 17.2.2.1, the Market Participant shall have the right to request, within 5 days or 2 Business Days, whichever is longer, a representation before the Market Operator to show cause why the Suspension Order, the Disconnection Order, or both, as the case may be, should not be issued.
- 17.2.2.3 Where the Market Participant:
- a. has not requested a hearing pursuant to Clause 17.2.2.2, or has notified the Market Operator that it does not intend to request such a hearing; or
  - b. has requested a hearing, then upon conclusion of a hearing the Market Operator may:
    - i. issue a Suspension Order to the Market Participant suspending or restricting all or any of the Market Participant's rights to participate in the CTBCM; and/or
    - ii. if considered appropriate, issue, with notice to the Market Participant, a Disconnection Order to the Transmission or Distribution Network Service Provider where the Market Participant is connected, directing Disconnection of the relevant Facilities or equipment of the Suspended

Market Participant from the Transmission Network or the Distribution Network as the case may be;and/or

iii. make such other order as the Market Operator deems appropriate.

- 17.2.2.4 Where the Market Participant has requested a hearing pursuant to Clause 17.2.2.2, the Market Operator, within ten [10] Business Days of the date of receipt of such request, shall conduct a representation providing the Market Participant with a reasonable opportunity to show cause as to why the Suspension Order, the Disconnection Order or both should not be issued against it. In such circumstances, the Market Operator shall not issue either the Suspension Order or the Disconnection Order until such hearing has been held.
- 17.2.2.5 the Market Operator shall lift a Suspension Order if the event which triggered its issuance is remedied and there are no other Events of Default in existence with respect to the Suspended Market Participant, provided that the Market Operator may, as a condition of lifting a Suspension Order, impose such conditions on the authorization of the Market Participant to participate in the CTBCM as the Market Operator determines appropriate including, but not limited to:
- a. establishing a lower buying and selling limit in respect of the Market Participant than would otherwise be the case under this Code;
  - b. establishing a more frequent continuing schedule of payments than would otherwise be the case under this Code; or
  - c. imposing more stringent Security Cover than would otherwise be the case under 14 of this Code.
- 17.2.2.6 Following the issuance of a Suspension Order to a Market Participant, the Market Operator may do one or more of the following to give effect to the Suspension Order:
- a. reject registering any new Contract submitted by the Suspended Market Participant;
  - b. withhold the payment of any amounts otherwise due to the Suspended Market Participant under this Code; or
  - c. make such further order or issue such directions to the Suspended Market Participant as the Market Operator deems appropriate.
- 17.2.2.7 The Transmission or Distribution Network Service Provider, as the case may be, which receives a Disconnection Order from the Market Operator, shall, disconnect the Facilities or equipment of the Suspended Participant referred to in the Disconnection Order, on the date and at the time specified in the Disconnection Order. The Transmission or Distribution Network Service Provider, as the case may be, shall not reconnect such Facilities or equipment until it receives the notice referred to in Clause 17.2.2.10, and shall reconnect such Facilities or equipment on the date and at the time specified in such notice. No costs associated with Disconnection and Reconnection shall be borne by the Market Operator.
- 17.2.2.8 the Market Operator may at any time and upon notice to the Suspended Market Participant, extend, stay the operation of or lift a Suspension Order or modify the conditions of any Suspension Order, and shall notify the Transmission or Distribution Network Service Provider, as the case may be, accordingly.

- 17.2.2.9 Where the Market Operator lifts or stays the operation of a Suspension Order issued to a Suspended Market Participant in respect of whom a Disconnection Order was issued, the Market Operator shall at the same time lift or stay the operation, as the case may be, of the Disconnection Order and shall advise the Suspended Market Participant, the Authority and the Transmission or Distribution Network Service Provider to which Transmission or Distribution Network the Suspended Market Participant is connected, accordingly.
- 17.2.2.10 Where the Market Operator extends a Suspension Order issued to a Suspended Market Participant in respect of whom a Disconnection Order was issued, the Market Operator may at the same time extend the Disconnection Order for a corresponding period of time and shall accordingly advise the Suspended Market Participant, the Authority and the Transmission or Distribution Network Service Provider to which Transmission or Distribution Network the Suspended Market Participant is connected.
- 17.2.2.11 The Market Operator shall, immediately following the issuance of a Suspension Order, publish a notice on the Website and issue a public statement that the rights of the Suspended Market Participant to participate in the CTBCM have been Suspended or restricted, including details of the suspension or restriction, and whether a Disconnection Order has also been issued in respect of the Suspended Market Participant. The Market Operator shall issue a public notice promptly after a Suspension Order and, where applicable, a Disconnection Order, is lifted, extended, modified or stayed publish the same on the Website.
- 17.2.2.12 From the time the Market Operator issues a Suspension Order to a Market Participant, the Suspended Market Participant is ineligible to trade or enter into any transaction in the CTBCM to the extent specified in the Suspension Order, until such time that the Market Operator notifies the Suspended Market Participant and all other Market Participants that the Suspension Order has been lifted or stayed.
- 17.2.2.13 The Suspended Market Participant shall comply with the terms of the Suspension Order issued to it. A Suspended Market Participant shall also comply with any order relating to it, including any directions or arrangements which may be made for the purpose of giving effect to the Suspension Order, made by the Market Operator.
- 17.2.2.14 A Suspended Market Participant shall remain liable for all of its obligations as a Market Participant, other than as expressly provided in its Suspension Order, including but not limited to, the payment of any monies to the Market Operator in respect of any Energy withdrawn while the Suspension Order is in effect. Issuance of a Suspension Order shall not affect any liability or obligation of a Suspended Market Participant for the payment of any monies to the Market Operator or any other person which was incurred or arose under these Market Commercial Code:
- a. prior to the date on which the Suspension Order was issued; or
  - b. during any period in which the operation of the Suspension Order has been stayed,
- regardless of the date on which any claim relating thereto may be made.

### 17.2.3 TERMINATION ORDERS AND DISCONNECTION ORDERS

- 17.2.3.1 The Market Operator may, by Termination Order, terminate a Market Participant's right to participate in the CTBCM where a Suspended Market Participant:

- a. has not remedied the Event of Default which triggered the issuance of the Suspension Order to the satisfaction of the Market Operator within 30 Business Days of the date of issuance of the Suspension Order; or
  - b. has notified the Market Operator that it is not likely to remedy such Event of Default.
- 17.2.3.2 Notwithstanding that a Market Participant may have remedied breaches of this Market Commercial Code or the Grid Code, the Market Operator may by Termination Order terminate a Market Participant's right to participate in the CTBCM if a Market Participant has been found to be in breach of this Code or the Grid Code on a persistent basis, pursuant to the non-compliance letters or financial penalties imposed pursuant to Sub-section 17.3.1
- 17.2.3.3 Where the Market Operator intends to issue a Termination Order, the Market Operator shall give the Market Participant notice of its intention to do so, such notice to specify:
  - a. the grounds upon which the Termination Order is proposed to be issued and details of any evidence on which the Market Operator is relying in support of its intention to issue the Termination Notice;
  - b. the time within which the Market Participant may make written representations as to why the Termination Order should not be issued; and
  - c. the right of the Market Participant to request a representation before the Market Operator to show cause why the Termination Order should not be issued.
- 17.2.3.4 Where the Market Operator gives to a Market Participant the notice referred to in Clause 17.2.3.3, it shall notify the same to the Authority, the Transmission or Distribution Licensee to whose Transmission Network or Distribution Network the Market Participant is connected.
- 17.2.3.5 Following expiry of the time specified in Clause b, and after consideration of any representations made by the Market Participant pursuant thereto, the Market Operator may:
  - a. subject to Clause 17.2.3.8, issue the Termination Order; or
  - b. make such order as the Market Operator determines appropriate including, but not limited to, restricting all or any of the Market Participant's rights to participate in the CTBCM and shall notify the Authority, the System Operator and the Transmission or Distribution Network Service Provider, to whose Transmission or Distribution Network the Suspended Market Participant is connected, accordingly.
- 17.2.3.6 Where the Market Operator issues a Termination Order it shall at the same time, if it has not already done so, issue a Disconnection Order with a copy to the Market Participant, for Disconnection of the Facilities or equipment from the Transmission or Distribution Network to which it is connected. The Market Operator shall notify the System Operator, the Transmission or Distribution Network Service Provider of the Disconnection Order.

- 17.2.3.7 The Market Operator after issuing a Disconnection Order, or the Transmission or Distribution Network Service Provider that receives a Disconnection Order from the Market Operator, shall, on the date and at the time specified in the Disconnection Order, Disconnect the Generation Plant, Load Facility or equipment, as the case may be, of the Terminated Market Participant referred to in the Disconnection Order. The Transmission or Distribution Network Service Provider, as the case may be, shall not reconnect such Facilities or equipment until the Terminated Market Participant is again admitted as a Market Participant in accordance with this Code. No costs associated with Disconnection and Reconnection shall be borne by the Market Operator.
- 17.2.3.8 Where the Market Participant has requested a representation pursuant to Clause c, the Market Operator shall conduct a hearing providing the Market Participant with a reasonable opportunity to show cause as to why a Termination Order should not be issued against it. In such case, the Market Operator shall not make the determination until such hearing has been held.
- 17.2.3.9 Upon a Termination Order being made in respect of a Market Participant, all of the rights of the Terminated Market Participant to participate in the CTBCM shall be Terminated.
- 17.2.3.10 The Market Operator shall, immediately following the issuance of a Termination Order, publish the Termination Order on the Website and issue a public announcement that the rights of the Terminated Market Participant to participate in the CTBCM have been terminated and that a Disconnection Order has been issued in respect of the Terminated Market Participant.
- 17.2.3.11 A Terminated Market Participant shall remain subject to and liable for all of its obligations and liabilities as a Market Participant, which were incurred or arose under this Code prior to the date on which it ceases to be a Market Participant, regardless of the date on which any claim relating thereto may be made.
- 17.2.3.12 A Terminated Market Participant who wishes to be readmitted as a Market Participant shall be required to re-apply for authorization to participate in the CTBCM, in accordance with the provisions of 3 of this Code. The Market Operator may impose such terms and conditions on the right of the Market Participant to participate in the CTBCM as the Market Operator determines appropriate in the circumstances, whether or not such terms and conditions are otherwise applicable to other Market Participants.

### **17.3 NON-COMPLIANCE**

#### **17.3.1 NON-COMPLIANCE LETTERS AND FINANCIAL PENALTIES**

- 17.3.1.1 This Sub-section sets forth the manner in which the Market Operator will issue non-compliance letters and fix financial penalties to be imposed on Market Participants for breaches of this Code or the Grid Code.
- 17.3.1.2 Where this Code provides for the imposition of a sanction in respect of the breach of a prescription or Clause, the Market Operator shall:
- a. determine the level of non-compliance by the Market Participant in accordance with Clause 17.3.1.3;

- b. determine the rate of recurrence of non-compliance by the Market Participant in accordance with Clause 17.3.1.4;
- c. based on the determinations made in accordance with paragraphs (a) and (b) determine whether to issue a non-compliance letter or impose a financial penalty; and
- d. where a determination is made to impose a financial penalty, fix the amount of the penalty in accordance with Clause 17.3.1.6.

17.3.1.3 The Market Operator shall determine the level of non-compliance referred to in a as follows:

- a. Level “L1” shall be determined where the Market Participant has complied in part, but not in whole, with all the requirements of Clause or a provision of this Code and the Grid Code and where the Market Participant has, on its own initiative, informed the Market Operator on a timely basis of the non-compliance, the reasons for non-compliance and the manner in and the time within which such non-compliance will be remedied;
- b. Level “L2” shall be determined where the Market Participant has failed to comply with all of the requirements of a Clause or a provision of this Code or the Grid Code and where the Market Participant has, of its own initiative, informed the Market Operator on a timely basis of the non-compliance, the reasons for non-compliance and the manner in which and the time within which such non-compliance will be remedied;
- c. Level “L3” shall be determined where the Market Participant has failed to comply, in whole or in part, with all of the requirements of a Clause or a provision of this Code or the Grid Code and has failed to inform the Market Operator of the non-compliance on its own initiative and on a timely basis but, at the Market Operator’s request and within the time specified in the request, informs the Market Operator of the reasons for non-compliance and the manner in which and the time within which such non-compliance will be remedied; and
- d. Level “L4” shall be determined where the Market Participant has failed to comply, in whole or in part, with all of the requirements of a Clause or provision this Code or the Grid Code and has failed to inform the Market Operator of the non-compliance on its own initiative, and on a timely basis, and has failed to respond to the Market Operator’s request, within the time specified in the request, for a statement of the reasons for such non-compliance and of the manner in which and the time within which such non-compliance will be remedied.

17.3.1.4 The Market Operator shall determine the rate of recurrence of non-compliance referred to inb based on the frequency and duration with which the Market Participant has been found by the Market Operator to be in breach of this Code.

17.3.1.5 Where the Market Operator has determined, based on the determinations made under Clause 17.3.1.2 and the provisions of the chart set forth in Clause 17.3.1.6, that the applicable sanction is the issuance of a letter of non-compliance, the Market Operator shall issue a letter of non-compliance to the Market Participant.



17.3.1.6 Where the Market Operator has determined, based on the determinations made under Clause 17.3.1.2 that the applicable sanction is the imposition of a financial penalty, the Market Operator shall impose on the Market Participant a financial penalty within the ranges described in the following table:

**Table 2: Financial Penalties**

Level of Non-Compliance	Range of Sanctions
L1	Non-Compliance letter and/or up to [.....] PKR
L2	Non-Compliance letter and/or up to [.....] PKR
L3	Non-Compliance letter and/or up to [.....] PKR
L4	Non-Compliance letter and From [.....] PKR to [.....] PKR

17.3.1.7 In fixing the amount of the financial penalty within the ranges described in the table set forth in Clause 17.3.1.6, the Market Operator, and where appropriate, the Arbitration Tribunal, shall have regard to:

- a. the circumstances in which the breach occurred;
- b. the severity of the breach;
- c. the extent to which the breach was inadvertent, negligent, deliberate or otherwise;
- d. the length of time the breach remained unresolved;
- e. the actions of the Market Participant on becoming aware of the breach;
- f. whether the Market Participant disclosed the matter to the Market Operator on its own or whether it was prompted to do so;
- g. any benefit that the Market Participant obtained or expected to obtain as a result of the breach;
- h. any previous breach by the Market Participant of this Code or the Grid Code;
- i. the impact of the breach on other Market Participants;
- j. the impact of the breach on the CTBCM as a whole; and
- k. such other relevant matters as the Market Operator considers appropriate.

17.3.1.8 Where:

- a. a Market Participant has breached a Clause or a provision for which no sanction is specified in the Market Commercial Code or the Grid Code; or
- b. a Market Participant has failed to comply with an order made pursuant to sub-Section 17.1.2,

the Market Operator shall, without prejudice to any other enforcement action that may be provided for in this Code or the Grid Code, impose on the Market Participant a financial penalty the amount of which shall be fixed by the Market Operator having regard to the criteria set forth in Clause 17.3.1.7 and to the factors noted in Clause b, where applicable.



- 17.3.1.9 The Market Operator may impose on a Market Participant a financial penalty in excess of the amount otherwise provided for in Clause 17.3.1.6 where:
- a. the Market Operator determines that the impact of the Market Participant's breach on the CTBCM is particularly severe; or
  - b. the rate of recurrence of non-compliance by the Market Participant with this Code and/or the Grid Code is of such frequency or duration as to warrant the imposition of a higher financial penalty.
- 17.3.1.10 No additional financial penalty may be imposed in respect of a breach of this Code or the Grid Code for which a financial penalty has already been imposed, provided that nothing in this Clause shall prevent the Market Operator from imposing a financial penalty for failure by a Market Participant to remedy a breach in respect of which a financial penalty has been imposed or if there is any repetition or continuation of such breach.

## 17.3.2 OFFICERS AND AGENTS

- 17.3.2.1 If any director, officer, employee partner or agent of a Market Participant or the Transmission Service Provider, or the Distribution Network Service Provider, or the System Operator or the Market Operator does any act or refrains from doing any act which if done or omitted to be done, as the case may be, by a Market Participant or the Transmission Service Provider, or the Distribution Network Service Provider, or the System Operator or the Market Operator would constitute a breach of this Code or the Grid Code, such act or omission shall be deemed, for the purposes of this Chapter of the Market Commercial Code, to be the act or omission of the Market Participant or the Transmission Service Provider, or the Distribution Network Service Provider, or the System Operator or the Market Operator, as the case may be.

## 18. DISCLOSURE, ACCESS AND CONFIDENTIALITY

### 18.1 RECORD RETENTION

- 18.1.1.1 The Market Operator shall develop and publish, and may from time-to-time revise, a policy relating to the period during which Records, or classes of Records prepared by the Market Operator and Market Participants for or in connection with this Code must be retained.
- 18.1.1.2 The Market Operator, the System Operator and each Market Participant and Service Provider shall retain Records or classes of Records prepared for or in connection with this Code for such period of at least five [5] years or any other larger period as per applicable law.
- 18.1.1.3 Where a Record is:
  - a. prepared in one or more draft forms;
  - b. not circulated in any such draft form by the person preparing it; and
  - c. subsequently prepared in final form,
    - only the final form of the Record is required to be retained.

### 18.2 INFORMATION DISCLOSURE

- 18.2.1.1 Where a person is required by this Code to disclose or provide a Record to another person, such Record shall be disclosed or provided within the time specified in, and in the form and manner required by, the applicable provisions of this Code. Where no time is specified in relation to the disclosure or provision of a specific Record, the Record shall be disclosed or provided within a reasonable time.
- 18.2.1.2 A Record disclosed or provided shall be, to the best of the disclosing or providing person's knowledge, true, correct and complete at the time at which such disclosure or provision is made. No person shall knowingly or recklessly disclose or provide a Record that, at the time and in light of the circumstances in which such disclosure or provision is made, is misleading or deceptive or does not state a fact that is required to be stated or that is necessary to make the statement not misleading or deceptive.
- 18.2.1.3 Where a person discovers that a Record disclosed or provided by it to any other person was, at the time at which it was disclosed or provided, or becomes untrue, incorrect, incomplete, misleading or deceptive, the disclosing or providing person shall immediately rectify the situation and disclose or provide the true, correct, complete, not misleading or not deceptive Record to the person to whom the original or currently untrue, incorrect, incomplete, misleading or deceptive Record had been disclosed or provided.
- 18.2.1.4 The System Operator and the Market Operator are entitled to use any Record obtained pursuant to this Code and the Grid Code in furtherance of the performance of its functions or duties under this Market Commercial code, the Grid Code, their Licences or applicable law.

## 18.3 ACCESS TO THE INFORMATION

### 18.3.1 OPEN ACCESS TO INFORMATION AND CONFIDENTIALITY

- 18.3.1.1 All persons shall have an equal opportunity for open and non-discriminatory access to all information in possession of the System Operator or the Market Operator, other than Confidential Information, required by this Code to be made available to Market Participants or other persons.
- 18.3.1.2 All information, other than Confidential Information, required by this Code to be made available to Market Participants or other persons shall be published by the Market Operator on the Website or otherwise made available in the manner and within the time prescribed in this Code. Where no time is specified in respect of the provision of a particular piece of information, such information shall be made available within a reasonable time.
- 18.3.1.3 The Market Operator shall organize and maintain information in the Market Operator's website, where Market Participants, the Service Providers, the Authority, Applicant Market Participants and the public in general can access non confidential information on the electricity system and the CTBCM.
- 18.3.1.4 The following information will be accessible to the public in the Market Operator website:
- a. the Market Participant Application Form;
  - b. The Market Participation Agreement;
  - c. The Service Provider Agreement
  - d. The Market Commercial Code;
  - e. The Grid Code;
  - f. The Market Commercial Code amendment proposals under consideration;
  - g. The Commercial Code Operating Procedures;
  - h. The Market Participants Register;
  - i. Load forecasts and load statistics presented by the Market Participants;
  - j. The prices of the Balancing Mechanism for Energy;
  - k. The results of the Balancing Mechanism for Capacity; and
  - l. The results of the verification compliance with the Capacity Obligations; and
  - m. The Capacity Certificates issued for each Generator.
- 18.3.1.5 The following information will be accessible to Market Participants and the Authority:
- a. The reports prepared by the Market Operator or the System Operator when this Code or the Grid Code establish that such report must be sent to Market Participants;
  - b. Ancillary Services provided and costs;
  - c. Expected and actual Must Run Generation, and its cost;
  - d. System Operator and the Market Operator Audit Report

- 18.3.1.6 Each Market Participant, each Service Provider and the Market Operator and System Operator shall keep confidential any Confidential Information which comes into the possession or control of that Market Participant or the Market Operator or of which the Market Participant or Market Operator becomes aware.
- 18.3.1.7 No Market Participant or Service Provider or the System Operator or the Market Operator:
- a. shall disclose Confidential Information to any person, except as expressly permitted by this Code;
  - b. shall permit access to Confidential Information by any person not authorized to have such access pursuant to this Code; and
  - c. shall use or reproduce Confidential Information for a purpose other than the purpose for which it was disclosed, or another purpose contemplated by this Code;
  - d. The Market Operator shall maintain internal measures, including measures relating to the protection of Confidential Information that enable the Market Operator to comply and monitor compliance with its obligations.

### 18.3.2 EXCEPTIONS

- 18.3.2.1 Unless prohibited by Applicable Law nothing in the Market Commercial Code shall prevent:
- a. the disclosure, use or reproduction of information if the information is, at the time of disclosure, generally and publicly available other than as a result of a breach of confidence by the Market Participant or the Market Operator;
  - b. the disclosure of Confidential Information by a Market Participant or the Market Operator to:
    - i. its director or employee, where such director or employee requires the Confidential Information for the due performance of that person's duties and responsibilities; or
    - ii. its legal or other professional advisor, auditor or other consultant, where such legal or other professional advisor, auditor or other consultant requires the information for purposes of this Code, or for the purpose of advising the Market Participant or the Market Operator in relation thereto;
  - c. the disclosure, use or reproduction of Confidential Information:
    - i. by the Market Participant that provided the Confidential Information;
    - ii. with the consent of the Market Participant that provided the Confidential Information; or
    - iii. in the case of Settlement Data or Metering Data, by or with the consent of the Market Participant to whom such data relates.
  - d. the disclosure, use or reproduction of Confidential Information to the extent required by Applicable Law or by a lawful requirement of any government or governmental body, regulatory body, authority or agency having jurisdiction over a Market Participant or the Market Operator.

- e. the disclosure, use or reproduction of Confidential Information if required in connection with legal proceedings, mediation, arbitration, expert determination or other dispute resolution mechanism relating to this Code. or for the purpose of advising a person in relation thereto; and
- f. the disclosure of Confidential Information if required to protect the health or safety of personnel, equipment or the environment;

### 18.3.3 COST OF ACCESS AND ELECTRONIC DATA SHARING

- 18.3.3.1 Nothing in this Code shall prevent information which is made available by means of electronic communications from being provided on a read-only basis.
- 18.3.3.2 Each Market Participant and any other person accessing, retrieving or storing information Published or otherwise made available by the Market Operator shall be responsible for its own costs of accessing, retrieving or storing such information.

## 19. COMPLEMENTARY AND TRANSITORY PROVISIONS

### 19.1 SUPPLEMENTARY PROVISIONS

#### 19.1.1 MARKET PARTICIPANTS HOLDING MULTIPLE LICENSES OR AUTHORIZATIONS

- 19.1.1.1 Whenever a Section, Sub-section, Clause or provision of this Code applies to a specific Category of Market Participant and/or it is used in any kind of calculation, it shall be interpreted as applicable to each Market Participant of such Category and the provision or calculation shall be construed accordingly.
- 19.1.1.2 Where a Market Participant is a Company which is also Licensed as Transmission or Distribution Network Service Provider, Metering Points shall be established at:
- a. The interface between a Generator Plant and/or Generation Unit, as it corresponds, and the Transmission or Distribution Network; and
  - b. Any other point within the Transmission or Distribution Network that the Market Operator or the System Operator considers necessary, for the appropriate implementation of this Code.
- Commercial Metering System shall be installed at such locations, regardless there are no commercial transaction at these points.
- 19.1.1.3 While processing the Application submitted by an Applicant, which also holds a Transmission or Distribution License, the Market Operator shall determine, in consultation with the System Operator, the points in the network referred to in Clause b at which Commercial Metering System shall be installed. The Market Operator is entitled to withhold the Registration of such Applicant, in one or more of the Categories requested by the Applicant, until the required Commercial Metering Systems are properly installed and commissioned.

### 19.2 TRANSITORY PROVISIONS

#### 19.2.1 INITIALLY APPOINTED METERING SERVICE PROVIDER

- 19.2.1.1 The NTDC will be deemed as being authorized by the Authority as Metering Service Provider for Pakistan.
- 19.2.1.2 At CMOD, the NTDC will be the sole authorised Metering Service Provider

#### 19.2.2 INITIAL CAPACITY OBLIGATIONS

- 19.2.2.1 The Authority shall determine, from time to time and through appropriate regulations, the amount Generation Capacity that each Market Participant shall own or have contracted to comply with its Capacity Obligations as established in this Code.
- 19.2.2.2 Until the Authority establishes the regulation indicated in 19.2.2.1 following values will apply for the Capacity Obligations:
- a. For Base Suppliers, the values indicated in Table 3;
  - b. For Competitive Suppliers, the values indicated in **Error! Reference source not found.**; and

- c. For BPCs which are registered as Market Participants, the values indicated in Table 5

**Table 3: Capacity Obligations for Base Suppliers**

Period		Capacity Obligations
		(In % of the of the registered or forecasted the Maximum Demand at System Peak Hours)
Ex-post compliance with the Capacity Obligations	Previous year <sup>(1)</sup>	100
Ex-ante compliance with the Capacity Obligations	Current year <sup>(2)</sup>	95
	Year I <sup>(3)</sup>	90
	Year 2	90
	Year 3	80
	Year 4	70
	Year 5	70

- (1) Previous year is the fiscal year immediately before the year in which compliance with the Capacity Obligations is verified.
- (2) Current year is the fiscal year in which compliance with the Capacity Obligations is being verified.
- (3) Year I is the fiscal year immediately after the year in which compliance with the Capacity Obligations is verified, and Year 2, 3, 4 and 5 shall be construed accordingly.

**Table 4: Capacity Obligations for Competitive Suppliers**

Period		Capacity Obligations
		(In % of the of the registered or forecasted the Maximum Demand at System Peak Hours)
Ex-post compliance with the Capacity Obligations	Previous year <sup>(1)</sup>	100
Ex-ante compliance with the Capacity Obligations	Current year <sup>(2)</sup>	60
	Year I <sup>(3)</sup>	0
	Year 2	
	Year 3	
	Year 4	
	Year 5	

- (1) Previous year is the fiscal year immediately before the year in which compliance with the Capacity Obligations is verified.
- (2) Current year is the fiscal year in which compliance with the Capacity Obligations is being verified.
- (3) Year 1 is the fiscal year immediately after the year in which compliance with the Capacity Obligations is verified, and Year 2, 3, 4 and 5 shall be construed accordingly.

**Table 5: Capacity Obligations for BPC**

Period		Capacity Obligations
		(In % of the of the registered or forecasted the Maximum Demand at System Peak Hours)
Ex-post compliance with the Capacity Obligations	Previous year <sup>(1)</sup>	100
	Current year <sup>(2)</sup>	95
Ex-ante compliance with the Capacity Obligations	Year 1 <sup>(3)</sup>	90
	Year 2	90
	Year 3	80
	Year 4	70
	Year 5	70

- (1) Previous year is the fiscal year immediately before the year in which compliance with the Capacity Obligations is verified.
- (2) Current year is the fiscal year in which compliance with the Capacity Obligations is being verified.
- (3) Year 1 is the fiscal year immediately after the year in which compliance with the Capacity Obligations is verified, and Year 2, 3, 4 and 5 shall be construed accordingly.

**19.2.3 ALLOCATION FACTORS OF LEGACY CONTRACTS**

19.2.3.1 Legacy Contracts will be commercially assigned to the Base Suppliers, associated with the DISCOs, and to K-Electric utilizing the Allocation Factors indicated in Table 6.



**Table 6: Base Suppliers Allocation Factors**

Supplier	Allocation Factor
LESCO	20.61%
GEPCO	9.17%
FESCO	12.32%
IESCO	9.82%
MEPCO	14.90%
PESCO	11.77%
HESCO	5.07%
QESCO	6.31%
TESCO	1.66%
SEPCO	4.76%
KE	3.61%

**19.2.4 INITIAL AMOUNTS OF THE SECURITY COVERS**

19.2.4.1 The amounts of the Security Covers which shall be provided to the Market Operator at CMOD by the Base Suppliers, associated with the DISCOs, and K-Electric are indicated in Table 7.

**Table 7: Initial Amount of Security Covers**

Supplier	Security Cover [10 <sup>6</sup> PKR]
LESCO	5,500
GEPCO	800
FESCO	6,000
IESCO	1,000
MEPCO	500
PESCO	500
HESCO	500
QESCO	500
TESCO	500
SEPCO	500
KE	????

**19.2.5 INITIAL PERMANENTLY CONGESTED AREAS**

19.2.5.1 For the application of the provisions indicated in Section 7.1.1, following areas shall be considered as Permanently Congested Areas:

- a. the territory served by K-Electric; and
- b. The rest of the territory of Pakistan

The areas indicated in 19.2.5.1 shall be delimited by the Metering Points listed in

19.2.5.2 Table 8.

**Table 8: Delimitation of K-Electric Permanently Congested Area**

Metering Point	Substation	Line
ASDF_001	Jamshoro 400 kV	Jamshoro 220 kV – TMK Road 220 kV
....		
....		
....		
<i>To be completed by CPPA-G / NTDC</i>		

19.2.5.3 NTDC shall notify to the System Operator and the Market Operator about Metering Points which shall be added or eliminated in

- 19.2.5.4 Table 8, due to new the expansion of the Transmission or Distribution Network.
- 19.2.5.5 In case the electrical studies or Dispatch simulations, performed by the System Operator, as a consequence of the expansion of the Transmission Network or the installation of new control or protection devices, shows that Congestion in the area served by K-Electric is eliminated or significantly reduced, the System Operator shall notify the Authority about such situation, requesting it K-Electric to no longer be considered a Permanently Restricted Area.
- 19.2.5.6 The area served by K-Electric will cease to be considered as a Permanently Congested Area by the Market Operator at 0:00 a.m. of the first day of the calendar month immediately after such notification is received by the Market Operator.

## 19.2.6 DEFAULT INTEREST

- 19.2.6.1 Default Interest shall be determined by the Authority from time to time. Until the moment the Authority issues an order, direction or regulation in contrary, the Default Interest shall be established at [x % per year]

## **ANNEX A: METHODOLOGY FOR DETERMINATION OF MARGINAL PRICES AND AASS**

### **A.1 GENERAL APPROACH**

- 19.2.6.2 The Grid Code establishes that the System Operator shall operate the system at its minimum cost, complying with the security and reliability criteria established in the same code. This, in turn, requires also to schedule the necessary Ancillary Services in the most economical way. The way to comply with all these prescriptions requires to perform a Security Constrained Economic Dispatch to schedule the production of each Generation Unit.
- 19.2.6.3 To achieve this goal, the System Operator shall have the necessary software tools and IT systems, as well as properly trained staff and appropriate operational procedures to ensure the system achieves its optimal economic performance, maintaining always the required levels of reliability and security of supply.
- 19.2.6.4 Regardless of the fact that the System Operator may not yet be equipped with state-of-the-art software and IT systems, or that some of the operational procedures requires adaptations or new ones developed, it shall make best efforts to operate the Pakistani system in the most economical way, within the security and reliability limits established in the Grid Code.
- 19.2.6.5 Provided that the System Operator complies with the prescription of Clause 19.2.6.4, it will be assumed that the result of the operations aligns with a Security Constrained Economic Dispatch and, therefore, the System Marginal Prices, as well as the identification of the Generation Units entitled for receiving compensation for producing, or allowing other Generation Units to produce, Ancillary Services shall be done through an ex-post analysis of the results of the daily operations.

### **A.2 PROCEDURE FOR DETERMINING THE SYSTEM MARGINAL PRICES**

- 19.2.6.6 Every Business Day, the System Operator shall utilize the results of the actual operations of the previous day, or previous days in cases of non-Business Days, to develop an ordered table of all Generation Units and Imports for which the System Operator is responsible for Dispatching, for each hour of the day (the Merit Order Table).
- 19.2.6.7 The Merit Order Table shall contain all Generation Units and Imports ordered in ascending order of their Variable Generation Cost.
- 19.2.6.8 Each Generation Unit or Import shall have associated four values:
- a. The Variable Generation Cost is the value which was used by the System Operator for Dispatching the Generation Units and Imports in the most economical way, pursuant Clause 19.2.6.4. In case the Variable Generation Cost of a Generation Unit is a function of its output or Generation Unit configuration, the value to be included in the table is the corresponding to the output at which this unit was dispatched.
  - b. An operational label, which shall have one of the following values:
    - i. “Unavailable”, applicable to Generation Units or Imports which were not available for being Dispatched at the corresponding hour;

- ii. “Zero Variable Cost”, applicable to available Generation Units which uses as primary Energy natural resources which do not have an associated cost. Hydro, Solar (either PV or CSP), Wind and other similar renewable technologies will be labelled as such. Nuclear Generation Units shall be labelled as “Zero Variable Cost” regardless its Variable Generation Cost may be different than zero;
  - iii. “Must Run”, applicable to available Generation Units not labelled as “Zero Variable Cost”, which have been dispatched to alleviate Congestion pursuant Clause 7.1.2.1;
  - iv. “Must Stop”, applicable to available Generation Units not labelled as “Zero Variable Cost”, which have not been dispatched, or have been dispatched below its maximum Capacity, to alleviate Congestion pursuant Sub-section 7.1.1;
  - v. “Non-Dispatched”, applicable to Generation Units not labelled as “Zero Variable Cost”, which have not been dispatched, or have been dispatched below its maximum Capacity, for other operational reasons. The System Operator shall clearly indicate which are these reasons;
  - vi. “Fully Loaded”, applicable to available Generation Units not labelled as “Zero Variable Cost” or “Must Run”, which have been dispatched at or above ninety percent [90%] of its maximum available Capacity;
  - vii. “Partially Loaded”, applicable to available Generation Units not labelled as “Zero Variable Cost” or “Must Run” or “Must Stop”, which have been dispatched below ninety percent [90%] of its maximum available Capacity;
  - viii. “Out of Merit”, applicable to the available Generation Units not labelled as “Zero Variable Cost” or “Must Stop”, which have not been committed by the System Operator. For the avoidance of doubt, a Generation Unit or Import may be labelled as “Out of Merit” even if this Generation Unit or Import has produced electric power during the corresponding hour, if this production has not been instructed by the System Operator.
- c. The Energy produced during the hour evaluated.
  - d. The available Capacity which shall be equal to:
    - i. The Energy produced during the hour evaluated in case of Generation Units labelled as “Zero Variable Cost”
    - ii. The declared Available Capacity for the hour evaluated, as per the provisions of the Grid Code.

19.2.6.9 An example of the table to be prepared is shown in Figure 2. The values included in such figure are for informational purposes (not representing a real situation).

Figure 2: Example of Merit Order Table

Time: From 2:00 p.m. to 3:00 p.m.					
Generation Unit	Available Capacity	Operating Cost	Dispatch	Label	Comments
TARBELA		0	554	Zero Cost	
TARBELA Ext 4		0	0	Zero Cost	
MANGLA		0	180	Zero Cost	
GHAZI BROTHA		0	730	Zero Cost	
WARSAK		0	60	Zero Cost	
...		0	87	Zero Cost	
MALAKAND - III	81	0	32	Zero Cost	
NEW BONG ESCAPE	84	0	19	Zero Cost	
...	147	0	29	Zero Cost	
CHASHNUPP-II	310	n.a.	311	Zero Cost	
CHASHNUPP-III	315	n.a.	315	Zero Cost	
...	3	0	3	Zero Cost	
ENGRO THAR COAL	625	3.2	607	Fully Loaded	
UCH	0	3.8	0	Unavailable	
PORT QASIM COAL	1250	5.19	1,248	Fully Loaded	
IDW-III (GHOTKI)	74	6.855	0	Not Dispatched	Not committed to allow dispatch generators with load following capabilities
● ● ●					
Guddu 6	60	8.82	62	Fully Loaded	
Guddu 7	80	8.82	0	Must Stop	
Guddu 8	80	8.82	0	Must Stop	
Guddu 9	80	8.82	90	Fully Loaded	
Guddu 10	80	8.82	70	Fully Loaded	
...					
GUDDU 3-4	300	10.5	0	Must Stop	
NANDI PUR	355	11.08	498	Fully Loaded	
GUDDU 1-2	200	11.33	0	Must Stop	
OREINT	205	11.8	161	Partially Loaded	
SAPPHIRE	205	12.02	199	Fully Loaded	
HALMORE	205	12.03	197	Fully Loaded	
SAIF	205	12.05	0	Out of Merit	
AGL	156	12.67	0	Out of Merit	
...					
FKPCL	151	13.32	0	Out of Merit	
CHANAR ENERGY LIMITED	22		0	Out of Merit	

19.2.6.10 For determining the System Marginal Price, only Generation Units labelled “Fully Loaded” and “Partially Loaded” will be considered.

19.2.6.11 The System Marginal Price, for each hour, will be calculated as the Variable Generation Cost of the cheapest Generation Unit labelled as “Partially Loaded”, which has been dispatched at a price higher than the most expensive Generation Unit labelled as “Fully Loaded”.

19.2.6.12 In case that the most expensive Generation Unit dispatched is labelled as “Fully Loaded” and there are no Generation Units labelled as “Partially Loaded” dispatched at a higher price, the System Marginal Price will be the Variable Generation Cost of the following Generation Unit labelled as “Out of Merit” in the Table indicated in Clause 19.2.6.6.

19.2.6.13 An example of discovering the System Marginal Price is shown in Figure 3. In this case, the Generation Unit “Nandi Pur”, which has 355 MW of Available Capacity and it was Dispatched at 270 MW sets the System Marginal Price, which results equal to 11.08 PKR/kWh.

**Figure 3: System Marginal Price based on the Merit Order Table**

Time: From 2:00 p.m. to 3:00 p.m.					
Generation Unit	Available Capacity	Operating Cost	Dispatch	Label	Comments
ENGRO THAR COAL	625	3.2	607	Fully Loaded	
PORT QASIM COAL	1250	5.19	1,248	Fully Loaded	
GUDDU 747	720	6.94	734	Fully Loaded	
CHAINA HUBCO COAL	1250	6.97	1,200	Fully Loaded	
SAHIWAL (COAL)(HSR)	1250	7.14	1,200	Fully Loaded	
UCH-II	375	7.2	286	Partially Loaded	
LIBERTY POWER	210	7.22	90	Partially Loaded	
FOUNDATION	168	8.27	78	Partially Loaded	
ENGRO	210	8.45	92	Partially Loaded	
Guddu 6	60	8.82	62	Fully Loaded	
Guddu 9	80	8.82	90	Fully Loaded	
Guddu 10	80	8.82	60	Partially Loaded	
H-B-SHAH	1207	9.72	1,176	Fully Loaded	
BALLOKI	1198	9.84	1,143	Fully Loaded	
BHIKI (QATPL)	1256	9.85	1,126	Fully Loaded	
NANDI PUR	355	11.08	270	Partially Loaded	
OREINT	205	11.8	161	Partially Loaded	
KAPCO	1345	13.42	179	Partially Loaded	

This Generation Unit sets the System Marginal Price

**A.3 PROCEDURE FOR DETERMINING THE GENERATORS ENTITLED TO RECEIVE AASS COMPENSATIONS**

19.2.6.14 As the results of the actual operations are assumed to align with those of a Security Constrained Economic Dispatch, it shall be assumed that:

- a. For the Generation Units which have Variable Generation Costs lower than the System Marginal Price and have not been dispatched at full load, it should be considered that they have been instructed to disconnect or to reduce their output for producing Ancillary Services or to allow other Generation Units to produce these.
- b. For the Generation Units which have Variable Generation Costs higher than the System Marginal Price and have been partially dispatched, it should be considered that they have been committed for producing Ancillary Services.

19.2.6.15 Pursuant Clause 19.2.6.14 following Generation Units are entitled to receive compensations for the production of Ancillary Services:

- a. Generation Units, labelled as “Out of Merit”, which Variable Generation Cost is lower than the System Marginal Price. These Generation Units shall receive a Loss of Opportunity Cost Compensation. The compensation for these Generation Units shall be calculated as per Clause 7.3.2.2;
- b. Generation Units, labelled as “Partially Loaded”, which Variable Generation Cost is lower than the System Marginal Price. These Generation Units shall receive a Loss of Opportunity Cost Compensation. The compensation for these Generation Units shall be calculated as per Clause 7.3.2.2; and
- c. Generation Units, labelled as “Partially Loaded”, which Variable Generation Cost is higher than the System Marginal Price. These Generation Units shall receive a variable cost compensation. The compensation for these Generation Units shall be calculated as per Clause 7.3.3.2.



19.2.6.16 An example of the determination of the Generation Units entitled to receive compensations for the provision of Ancillary Services is shown in Figure 4. In this case, six Generation Units were entitled to receive Loss of Opportunity Cost Compensation (JDW-III (Ghotki); UCH-II; Liberty Power; Foundation; Engro; Guddu 10 and Guddu 3-4). Two Generation Units were entitled to receive variable cost compensation (Orient and Kapco).

**Figure 4: Generation Units Entitled to Receive Compensations for AASS**

Time: From 2:00 p.m. to 3:00 p.m.

Generation Unit	Available Capacity	Operating Cost	Dispatch	Label	Comments
ENGRO THAR COAL	625	3.2	607	Fully Loaded	
PORT QASIM COAL	1250	5.19	1,248	Fully Loaded	
JDW-III (GHOTKI)	24	6.855	0	Out of Merit	
GUDDU 747	720	6.94	734	Fully Loaded	
CHAINA HUBCO COAL	1250	6.97	1,200	Fully Loaded	
SAHIWAL (COAL)(HSR)	1250	7.14	1,200	Fully Loaded	
UCH-II	375	7.2	286	Partially Loaded	
LIBERTY POWER	210	7.22	90	Partially Loaded	
FOUNDATION	168	8.27	78	Partially Loaded	
ENGRO	210	8.45	92	Partially Loaded	
Guddu 6	60	8.82	62	Fully Loaded	
Guddu 9	80	8.82	90	Fully Loaded	
Guddu 10	80	8.82	60	Partially Loaded	
KOTRI	120	9.55	0	Must Stop	
H-B-SHAH	1207	9.72	1,176	Fully Loaded	
BALLOKI	1198	9.84	1,143	Fully Loaded	
BHIKI (QATPL)	1256	9.85	1,126	Fully Loaded	
GUDDU 3-4	300	10.5	0	Out of Merit	
NANDI PUR	355	11.08	270	Partially Loaded	
GUDDU 1-2	200	11.33	0	Out of Merit	
OREINT	205	11.8	161	Partially Loaded	
GULF POWER	96	12	0	Out of Merit	
SAIF	205	12.05	0	Out of Merit	
AGL	156	12.67	0	Out of Merit	
ROUSCH	395	13.01	0	Out of Merit	
FKPCL	151	13.32	0	Out of Merit	
KAPCO	1345	13.42	179	Partially Loaded	Required to provide voltage support
KEL	122	13.67	0	Out of Merit	
AEL	30	14.59	0	Out of Merit	
CHANAR ENERGY LIMITED	22		0	Out of Merit	

Entitled to receive Loss of Opportunity Cost Compensation

Entitled to receive Variable Cost Compensation

## ANNEX B: DECLARATION FOR BECOMING COUNSELLOR OR MEMBER OF THE DISPUTE RESOLUTION PANEL

Declaration of Nominee for Membership on the Dispute Resolution Panel or for the Position of Dispute Resolution Counsellor

In support of my nomination as a candidate for [membership on the Dispute Resolution Panel] / [the position of Dispute Resolution Counsellor], I hereby declare:

1. That I am not a member, officer, employee or agent of:

- a. any person that is required to obtain a License pursuant to the Act or of an Affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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2. That I do not have any direct or indirect legal or beneficial interest in or commercial affiliation with:

- a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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3. That my spouse is not a member, officer, employee or agent of:

- a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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4. That my spouse does not have any direct or indirect legal or beneficial interest in or commercial affiliation with:

- a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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5. That no relative of myself or my spouse is a member, officer, employee or agent of:

- a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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6. That no relative of myself or my spouse has any direct or indirect legal or beneficial interest in or commercial affiliation with:

- a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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7. I understand that, for purposes of this declaration:

- a. "Act" means the Regulation of Generation, Transmission, and Distribution of Electric Power Act, 1997 (XL of 1997);
- b. a person has a commercial affiliation with another person if the first person supplies goods or services to or receives goods or services from the other person, other than goods or services received in the ordinary course of being a customer of the Transmission Licensee, a Distribution Licensee or an affiliate of a Transmission Licensee or a Distribution Licensee or a Supplier;
- c. an interest held as the beneficiary of a trust that does not permit the beneficiary to have any knowledge of the holdings of the trust is not a legal or beneficial interest;
- d. an interest in a mutual fund is not a legal or beneficial interest unless the mutual fund is operated as an investment club where:

- (i) its shares or units are held by not more than 50 persons and its indebtedness has never been offered to the public;
- (ii) it does not pay or give any remuneration for investment advice or in respect of trades in securities, except normal brokerage fees; and
- (iii) all of its members are required to make contributions in proportion to the shares or units each holds for the purpose of financing its operation;

8. I shall promptly disclose any circumstance which causes or is likely to cause any of the declarations made above ceasing to be complete or accurate.

Dated: \_\_\_\_\_

Signed: \_\_\_\_\_

Name: \_\_\_\_\_

## **ANNEX C: DECLARATION FOR BECOMING MEMBER OF THE MARKET SURVEILLANCE PANEL**

Declaration of Nominee for Membership on the Market Surveillance Panel

In support of my nomination as a candidate for membership on the Market Surveillance Panel, I hereby declare:

1. That I am not a member, officer, employee or agent of:
  - a. any person that is required to obtain a License pursuant to the Act or of an Affiliate of such person; or
  - b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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2. That I do not have any direct or indirect legal or beneficial interest in or commercial affiliation with:
  - a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
  - b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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3. That my spouse is not a member, officer, employee or agent of:
  - a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
  - b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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4. That my spouse does not have any direct or indirect legal or beneficial interest in or commercial affiliation with:

- a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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5. That no relative of myself or my spouse is a member, officer, employee or agent of:

- a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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6. That no relative of myself or my spouse has any direct or indirect legal or beneficial interest in or commercial affiliation with:

- a. any person that is required to obtain a License pursuant to the Act or of an affiliate of such person; or
- b. any person that is a Market Participant or of an Affiliate of such person, except as noted below:

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7. I understand that, for purposes of this declaration:

- a. "Act" means the Regulation of Generation, Transmission, and Distribution of Electric Power Act, 1997 (XL of 1997);
- b. a person has a commercial affiliation with another person if the first person supplies goods or services to or receives goods or services from the other person, other than goods or services received in the ordinary course of being a customer of the Transmission Licensee, a Distribution Licensee or an affiliate of a Transmission Licensee or a Distribution Licensee or a Supplier;
- c. an interest held as the beneficiary of a trust that does not permit the beneficiary to have any knowledge of the holdings of the trust is not a legal or beneficial interest;

- d. an interest in a mutual fund is not a legal or beneficial interest unless the mutual fund is operated as an investment club where:
  - (i) its shares or units are held by not more than 50 persons and its indebtedness has never been offered to the public;
  - (ii) it does not pay or give any remuneration for investment advice or in respect of trades in securities, except normal brokerage fees; and
  - (iii) all of its members are required to make contributions in proportion to the shares or units each holds for the purpose of financing its operation;

8. I shall promptly disclose any circumstance which causes or is likely to cause any of the declarations made above ceasing to be complete or accurate.

Dated: \_\_\_\_\_

Signed: \_\_\_\_\_

Name: \_\_\_\_\_