

**AMENDED ELECTRICITY MARKET ANCILLARY SERVICES
REGULATION**
After Public Consultation

SECTION 1

Objective, Scope, Basis and Definitions

ARTICLE 1 Objective

[Previous Article 1]

(1) The objective of this Regulation is to arrange commercial principles and procedures regarding the provision of services that are provided as part of ancillary services in the electricity market.

ARTICLE 2 Scope

[Previous Article 2]

(1) This Regulation covers duties, authorization and responsibilities of the parties regarding the provision of services that are provided as part of ancillary services in the electricity market, provision method of these services, the principles and procedures regarding payments made to the parties providing services, and the sanctions to be applied against the parties that do not provide service.

ARTICLE 3 Legal Basis

[Previous Article 3]

(1) This Regulation has been prepared based on Electricity Market Law no. 4628.

ARTICLE 4 Definitions

[Previous Article 4]

¹(1) For the purposes of this Regulation, the following terms shall bear the following meanings:

a) Instantaneous demand control relay: Equipment that gives opening instruction to the breakers for down-regulation service in case there is a decrease in frequency to a level below the predetermined operating values,

¹ Amended in the Official Gazette no. 27580 dated 13/05/2010.

b) Instantaneous demand control reserve: Load amount that is optionally offered by the consumption facilities and that can automatically be disconnected by the instantaneous demand control relays when the system frequency decreases,

c) Over-excited operation: Increasing excitation currents of the synchronous compensators and/or generators when the system voltage decreases below operation values specified in the Electricity Transmission System Supply Reliability and Quality Regulation published in the Official Gazette no. 25639 dated 10/11/2004,

ç) Ministry: Ministry of Energy and Natural Resources,

d) President: President of the Energy Market Regulatory Board,

e) Non-spinning reserve: Reserves that are provided through the activation of a disabled generation facility in accordance with the instruction of the System Operator within the period determined by the System Operator,

f) Regional capacity renting: In order for the preservation of the system safety and fulfillment of the system needs that might arise due to inadequate capacity, the renting of the capacities of the new generation facilities and/or capacities added to the existing generation facilities through the tenders made by TEIAS,

f) Regional load dispatch center (RLDC): The control centre within the body of TEIAS that monitors generation, transmission and consumption activities, and that is responsible for the coordination and management of the operating maneuvers of the transmission system,

g) Distribution system operator: Distribution license owner legal entity that is responsible for the distribution system operation within the boundary of the distribution region he is registered to,

h) Balancing: Activities performed to ensure the balance between electricity demand and supply,

i) Balancing entity: Generation or consumption facility or part of the generation or consumption facility eligible to participate in balancing that is described in the Electricity Market Balancing and Settlement Regulation published in Official Gazette no. 25632 dated 3/11/2004,

i) Balancing power market: The organized wholesale electricity market, which is operated by the System Operator and where the reserve capacity, obtained by the change in output power within 15 minutes, is sold or purchased, to serve the purpose of real-time balancing of demand and supply,

j) Balancing mechanism: Activities which consist of day ahead balancing and real-time balancing as addressed in the Electricity Market Balancing and Settlement Regulation,

k) Start-up duration: Elapsed time to make generation facility begin electricity generation by synchronizing it to the system,

l) Under-excited operation: Decreasing excitation current of synchronous compensators and/or generators when the system voltage increases over operation values determined in the Electricity Transmission System Supply Reliability and Quality Regulation,

m) Energy surplus: The condition when the total amount regarding purchases, bids and settlement based electricity energy given to the system that are realized by the market participants on a settlement period basis as part of day ahead balancing and bilateral agreements are more than the total amount of the sales, offers and settlement based electricity energy withdrawn from the system that are realized as part of day ahead balancing and bilateral agreements,

n) Energy imbalance: Energy shortage or surplus of a market participant calculated for a settlement period,

o) Energy shortage: The condition when the total amounts regarding purchases, bids and settlement based electricity energy given to the system that are realized by the market

participants on a settlement period basis as part of day ahead balancing and bilateral agreements are less than the total amounts of the sales, offers and settlement based electricity energy withdrawn from the system that are realized as part of day ahead balancing and bilateral agreements,

ö) Invoicing period: The period that begins at 00:00 hours on the first day of a calendar month and ends at 24:00 hours on the last day of that month,

p) Price-fixing commission: The Commission constituted in TEIAS that is responsible for the determination of the primary frequency control unit service cost and for the submission of it to EMRA,

r) Frequency: The number of alternating current cycles in one second in the system expressed in Hertz,

s) Real-time Balancing: The actions carried out by the System Operator in order to balance the supply and demand of active electricity energy in real-time through primary frequency control, secondary frequency control, balancing power market, non-spinning reserve and emergency precautions,

ş) Voltage regulator: The equipment regulating the terminal voltage of generators,

t) Day ahead market: The organized wholesale electricity market established for purchase and sale transactions of electricity to be delivered in the day ahead on the basis of settlement period and that is operated by the Market Operator,

u) Speed governor: The device regulating turbine output power,

ü) Bilateral contracts: The commercial contracts between real persons or legal entities and licensees or among licensees for the purchase and/or sale of electricity under the provisions of private law and that are not subject to Board approval,

v) Transmission system operator: System Operator,

y) Relevant legislation: Laws, regulations, communiqués, circulars and Board decisions regarding electricity market and licenses of the related legal entities,

z) Operating reserve: Additional generation capacity that can be provided from active units and/or units that are not active but can be activated in a short time and/or reserves formed by reducing the demand in order to contribute to the correction of frequency deviations and ensure system stability and defined in the Electricity Market Grid Code published in the Official Gazette no. 25001 dated 22/1/2003,

aa) Nominal connection point: The nominal point used to calculate losses in the loss coefficient methodology that will be determined by the Board,

bb) Law: Electricity Market Law no. 4628 dated 20/2/2001,

cc) Final Day Ahead Generation/Consumption Schedule (FDGS): The generation or consumption values that is anticipated to be actualized by the settlement aggregation entity in the following day depending on obligations of the party who is responsible for the balancing to which it is attached and on result of the day ahead balancing, and that is notified to the System Operator,

çç) Board: The Energy Market Regulatory Board,

dd) Authority: The Energy Market Regulatory Authority,

ee) National load dispatch center (NLDC): The unit under the body of TEIAS in charge of real-time balancing of electricity demand and supply and system operation,

ff) Organized wholesale electricity market: The electricity markets where the wholesale purchase and sales of electricity energy, capacity and their byproducts and the electricity System Operator such as day ahead market, balancing power market and ancillary services,

gg) Average opportunity cost: The cost that emerges when the sale of the mentioned capacity of the related generation facility cannot be actualized in the direction of up-regulation determined in the balancing power market because of the allocation of a specific

part of a generation facility's capacity by the System Operator to provide secondary frequency control service, and that is calculated by deducting weighted average of the generation facilities' offers, that are introduced to the balancing power market for that hour, from the system marginal price of the related hour,

ğğ) Black start capability: Energizing a part of the system through generation facilities that can start generation without needing an external power supply in case of black out,

hh) Automatic Generation Control System (AGC): Equipment that ensures the increase and decrease of the generation facilities' active power output via signals that are automatically sent by a central system,

ıı) Payment notifications: Notifications that consist of detailed information on the imposed penalties and payments that will be made to the legal entities providing ancillary service, that are the basis of the bills that will be prepared within this context and submitted to the related legal entities via MMS,

ii) Sampling: The process of coming into a general conclusion about the whole group by examining a sample that is randomly selected from a whole group and therefore consisting of unit lesser than the whole group,

jj) Performance tests: Tests applied to confirm the compliance of the ancillary service capacities of the generation and consumption facilities in accordance with the provisions of the Electricity Market Grid Code,

kk) Market Operator: Market Financial Settlement Centre,

ll) Market participant: Licensed legal entities defined in the Electricity Market Balancing and Settlement Regulation,

mm) Market Financial Settlement Center (MFSC): The unit under the body of TEIAS whose duties and responsibilities are set out in the Law and in the Balancing and Settlement Regulation, and which is responsible for operating day ahead planning/day ahead market and settlement,

nn) Market management system (MMS): The internet-based applications accessible by the Market Operator, System Operator, market participants and transmission and distribution license owner legal entities responsible for reading the meters in order to execute the balancing mechanism and settlement transactions,

oo) Primary frequency control service agreements: Service agreements signed between legal entities engaged in generation activities and obliged to provide primary frequency control service and TEIAS, which include subjects such as definition of the service that will be provided, technical specifications regarding generation facilities registered to the related legal entities and taking place within the context of agreement, points regarding payment and obligations of the parties,

öö) Primary frequency control: Stabilizing the system frequency to a new balance point through automatic increase or decrease of unit active power output via speed governor in response to a decrease or an increase of the system frequency,

pp) Primary frequency control participation rate: The rate that is applied to the installed capacity of the legal entities' generation facilities that are obliged to provide primary frequency control to calculate primary frequency control reserve amount that will be provided by the legal entities engaged in generation activity and obliged to provide primary frequency control reserve,

rr) Primary frequency control reserve capacity: The total reserve amount needed to be activated by the related generation facility in case of the frequency deviation of ± 200 mHz in the system frequency that is determined as a result of performance tests mentioned in the Electricity Market Grid Code and that takes part in the primary frequency control service agreements,

ss) Primary frequency control reserve amount: The reserve amount notified by the legal entities engaged in generation activities and which will be provided by the generation facilities as the primary frequency control response in accordance with the deviations in the system frequency,

şş) Primary frequency control response: The automatic increase or decrease of unit active power output via speed governor in case the system frequency increases or decreases within the context of primary frequency control service that is defined in the Electricity Market Grid Code,

tt) Primary frequency control reserve: The part of the operation reserve that is used to keep the system frequency in the normal regulation interval by using the turbine speed governor automatically and that is chosen to be sufficient for this operation,

uu) Reactive power control: To supply reactive power to the system or to withdraw reactive power from the system while units are operating as generator or synchronous compensator,

üü) Secondary frequency control module: Software components of the MMS regarding secondary frequency control service,

vv) Secondary frequency control reserve capacity: The total reserve amount that is determined as a result of the performance tests mentioned in the Electricity Market Grid Code, that takes place in the secondary frequency control service agreements, and that is required to be activated within the minimum and maximum limits by the related generation facility following the signals sent from the automatic generation control system,

yy) Secondary frequency control reserve amount: Reserve amount that is provided by a generation facility's capacity between FDGS and available capacity and/or by the System Operator with the up-regulation, down-regulation instructions mentioned in the balancing power market, that is notified to the generation license holder legal entities who provide secondary frequency control service determined by the System Operator, and that will be provided by the generation facilities as the secondary frequency control response,

zz) Secondary frequency control response: The automatic increase or decrease of unit active power output via signals automatically sent from the central system, within the context of secondary frequency control service in case the system frequency increases or decreases,

aaa) Secondary frequency control Bringing the system frequency to nominal value and keeping the electricity energy exchange among neighbor electricity networks at the pre-programmed level through automatic increase or decrease of unit active power output via a signal sent from NLDC in response to a decrease or an increase in the system frequency,

bbb) Secondary frequency control reserve: The part of the operation reserve that is used by means of secondary control system and that is chosen to be adequate for this operation, in order to release the primary frequency control reserve used for frequency control, to bring the frequency back to its nominal value, and to keep the electricity energy exchange among neighbor electricity networks at the pre-programmed level,

ccc) Synchronous compensation: Reactive power generation or consumption through adjusting the excitation currents of running synchronous machines in order to keep the power factor of the system at the desired level,

ççç) System: All user systems including electricity transmission system and distribution system,

ddd) System operator: National Load Dispatch Center,

eee) Black out: Unintended loss of energy of the electricity system partially or completely,

fff) Demand: Amount of active and reactive power that will be consumed,

ggg) TEIAS: Turkish Electricity Transmission Co. Inc.,

ğğğ) Maximum bid price: The price limit that determines the maximum price that can be offered in the auctions conducted to provide instantaneous demand control services,

hhh) Facility: The plant and/or equipment installed to perform the functions of generation or consumption of electricity,

ııı) TETAS: Turkish Electricity Trading and Contracting Co.

ııı) Black start capability: To activate a plant in accordance with the instruction of TEIAS with its own capability and without external feeding and to energize a part of the system in case of black out,

ııı) TURKAK: Turkish Accreditation Agency,

kkk) Settlement: The activities of calculating payables and receivables resulting from balancing mechanism and/or energy imbalances and preparation of the related payable-receivable notices,

lll) Settlement aggregation entity: Active electric energy generating or consuming entities which are defined by market participants and registered via MMS so that the settlement calculations for each market participants can be made,

mmm) Unit: Each generation set which can load and unload independently, and the part of steam turbine and generator that will function connected to gas turbine and generator with each of its gas turbine and generator for combined cycle power plants,

nnn) Generation: To transform energy resources into the electricity energy within generation facilities,

ooo) Legal entity engaged in generation activity: Legal entities holding generation or autoproducer licenses,

ööö) Generation Facility: The facilities where electricity is generated,

ppp) Ancillary services: The services that will be provided by the related legal entities connected on the transmission system or distribution system as per this Regulation, and that are defined in details in the Electricity Market Grid Code published in the Official Gazette dated 22/1/2003 with no. 25001 so as to ensure secured operation of the transmission or distribution system and to put electricity in service in accordance with the quality conditions,

rrr) Ancillary services agreements: Agreements that set out the terms, conditions, and fees reflecting the total cost of supplying ancillary services to TEIAS by generation companies, distribution companies, autoproducers or consumers connected to the transmission and/or distribution system as per the provisions of this Regulation and to the holder of the relevant distribution license by generation companies, autoproducers or consumers connected to the distribution system in accordance with the Electricity Market Distribution Regulation published in the Official Gazette no. 25025 dated 19/2/2003,

sss) Ancillary service certificates: The documents given by the authorized independent companies certifying that facilities providing ancillary services are in accordance with the provisions of Electricity Market Grid Code and this Regulation,

şşş) Monitoring ancillary services: Activities regarding following up, monitoring and examining data regarding facilities and/or related equipment for the purpose of controlling commitments regarding ancillary services,

ttt) Up-regulation: The situation where a balancing entity sells electricity to the system by increasing its generation or decreasing its consumption, in line with the instructions issued by the System Operator,

uuu) Up-regulation instruction: The notifications issued by the System Operator to the related market participant for the up-regulation of the market participants participating in balancing settlement market,

üüü) Up-regulation bid: The unit prices requested by market participants participating in balancing power market for up-regulation,

vvv) Up-regulation offer volume: The volumes of increase in generation or decrease in consumption, which balancing power market participants propose to undertake in the related balancing entity,

yyy) Up-regulation offer: The offers submitted by the market participants participating in the balancing power market for up-regulation, including data such as price, volume and the effective period,

zzz) Down-regulation: The situation where a balancing entity takes energy from the system by decreasing its generation or increasing its consumption, in line with the instructions issued by the System Operator,

aaaa) Down-regulation instruction: The notifications issued by the System Operator to the related market participants, for the down-regulation of market participants participating in balancing power market,

bbbb) Down-regulation bid price: The unit prices requested by market participants participating in balancing power market, for down-regulation,

cccc) Down-regulation bid volume: The volumes of decrease in generation or increase in consumption, which balancing power market participants propose to undertake in the related balancing entity,

çççç) Down-regulation offer: The offers submitted by the market participants participating in balancing power market for down-regulation, including data such as price, volume and the effective period,

dddd) Loading speed: The output power change of the generation facility in a unit of time,

SECTION 2

General Principles Regarding the Provision of Ancillary Services

ARTICLE 5 Ancillary services and the provision of ancillary services

[Previous Article 5]

(1) Ancillary services consist of services that are used by the System Operator in a way as to ensure operational security of the system and system integrity, and to ensure the operation of the system in accordance with the criteria regarding supply quality and operation conditions specified in the Electricity Transmission System Supply Reliability and Quality Regulation.

(2) The provision of ancillary services consist of provision of ancillary services required by the System Operator, **namely** TEIAS, by the legal entities who can provide these services, determination of the facilities and/or the legal entities by whom the service will be provided by TEIAS, and signing ancillary services agreements when required and management of the activities by TEIAS regarding the receivables and payable transactions arising from these activities, and administrative acts necessary for these activities.

ARTICLE 6 General principles regarding the provision of ancillary services

[Previous Article 6]

(1) Activities regarding the provision of ancillary services shall be conducted on the basis of the following general principles;

a) Ancillary services shall be supplied on the basis of the methods that ensure the efficiency of these services, minimize the costs regarding the provision of ancillary services, do not discriminate among equal parties, and promote investments in the new generation and consumption facilities that are capable of providing ancillary services,

b) TEIAS acts without any discrimination among equal parties by taking into consideration the technical specifications, the system conditions and the regional requirements regarding the determination of facilities and/or legal entities that will provide ancillary services, the signature of ancillary services agreements when required, and the provision of these services,

c) TEIAS shall provide ancillary services that will ensure operation of the transmission system in accordance with the supply quality and operational conditions criteria specified in the Electricity Transmission System Supply Reliability and Quality Regulation in such a manner that will assure the system's operational security and the preservation of its integrity, and that will minimize the cost of ancillary services provision, without discriminating among equal parties,

ARTICLE 7 Duties, authorizations and responsibilities of the parties

[Previous Article 7]

(1) TEIAS shall perform the following tasks regarding the provision of ancillary services within the framework of its authority and responsibilities:

a) Determination of ancillary service requirements by the System Operator in such way as to secure the operation of the system in line with the supply quality and operational conditions criteria specified in the Electricity Transmission System Supply Reliability and Quality Regulation, and in the Electricity Market Grid Code by assuring the operational security and integrity of the system,

b) Fulfillment of the required duties for which a demand is determined by the System Operator in order to provide ancillary services in accordance with the provisions of this Regulation,

c) To participate in performance tests of the facilities that will provide ancillary services to supervise and control,

ç) To monitor ancillary services provided by the legal entities via System Operator and/or RLDC that the facility providing the service belongs to,

d) To calculate and to make the payment of the charge amounts regarding ancillary services those are provided by the legal entities,

e) To put sanctions into action in accordance with this Regulation against the legal entities that are obliged to supply ancillary service and infringe this obligation, and to report this situation to the Authority,

f) To prepare and to publish reports regarding the supplied ancillary services that will be demanded by the Authority,

(2) Legal entities that are obliged to provide ancillary service as per the relevant legislation and/or the ancillary service agreement made with TEIAS perform the following tasks regarding ancillary services provision:

a) Accomplishment of the ancillary services pursuant to the provisions of the relevant legislation and ancillary services agreements,

b) To ensure the fulfillment of the performance tests regarding the provision of ancillary service via authorized independent firms,

c) To obtain equipment regarding ancillary services monitoring, and putting it into operation,

ç) To provide data, information and documents that will be requested by TEIAS regarding the provision of ancillary services,

d) To make the complete and on time payment of the fines that are put into effect in case of infringement of the obligations regarding ancillary service provision,

(3) Distribution license holder legal entities perform tasks regarding ancillary services provision within the scope of Electricity Market Distribution Regulation in accordance with principles and procedures defined in this Regulation.

ARTICLE 8 Ancillary services certification principles

[Previous Article 8]

(1) Legal entities that are required to provide ancillary service as per the relevant legislation and/or ancillary services agreements shall certify to TEIAS that the facilities from which they will provide ancillary service measured up for the related ancillary service. Ancillary service certificates are submitted to TEIAS before the provision of ancillary service and within the periods that will be determined in the agreement. Each ancillary service is certified with a separate certificate.

(2) TEIAS can ask for the renewal of the ancillary service certificate of the related facility in case it is determined within the frame of principles of the relevant ancillary service agreement that the service is not provided by the facility which supply ancillary service in consequence of the monitoring process and the controls made by TEIAS. If it is demanded by TEIAS, legal entity should renew certificate regarding the related ancillary service within 2 month; otherwise, existing certificate will be deemed invalid.

(3) Ancillary service certificates are based on the performance tests aforementioned in the Electricity Market Grid Code. Service parameters that constitute the basis for the ancillary services agreements and ancillary service payments regarding a facility providing ancillary service are determined in consequence of the performance tests and are indicated in the ancillary service certificate.

(4) Ancillary service certificates are given by TURKAK or by the accreditation institutions having mutual recognition agreements with TURKAK in order to do ancillary services performance tests and by the companies which have obtained conformity certificate from TURKAK and have been accredited as Type A inspection organization in accordance with TS EN ISO IEC 17020 standard.²

(5) It is the legal entities' responsibility to implement performance tests regarding the related ancillary service that they will provide through the accredited firms, and to obtain the related ancillary service certificate and to submit it to TEIAS. Performance tests regarding the related ancillary service are performed under the supervision of TEIAS.

ARTICLE 9 Monitoring, controlling and examination of the ancillary services³

[Previous Article 9]

(1) According to Electricity Market Grid Code, TEIAS is liable for monitoring and controlling supplied ancillary services. It is the RLDC's; which the facility where the services are provided belongs to, and/or the System Operator's responsibility to monitor and control the ancillary services that are provided by the legal entities in pursuant to the procedures and principles aforementioned in the Electricity Market Grid Code. In case a doubt arises concerning a violation of providing the ancillary services that are provided by the legal

² Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

³ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

entities within the principles and procedures specified in the related legislation, TEIAS may investigate the situation on the facility where the service is provided without prior notice. Such legal entity is liable to provide all necessary convenience during this investigation.⁴

(2) Facilities that will provide ancillary service shall be observable so as to ensure the requirements defined in the Electricity Market Grid Code for the related service. Legal entities providing ancillary services shall provide required software and hardware to make the connection with TEIAS's monitoring system for data exchange.

SECTION 3

Primary Frequency Control

ARTICLE 10 Principles regarding the provision of primary frequency control service

[Previous Article 10]

(1) All generation facilities with 50 MW and above installed capacity except the ones mentioned below shall participate in the primary frequency control:

- a) Canal and river type hydroelectric generation facilities,
- b) Wind power based generation facilities,
- c) Solar power based generation facilities,
- ç) Wave power based generation facilities,
- d) Tidal power based generation facilities.

(2) License holder legal entities that own generation facilities, qualified as indicated in the first clause of this Article are obliged to sign primary frequency control service agreement in order to participate in primary frequency control.

(3) License holder legal entities that own generation facilities, qualified as indicated in the first clause of this Article are obliged to participate in primary frequency control service permanently and in such a way that they provide primary frequency control reserve amount at least, at the level of primary frequency control participation rate of the generation facilities' total installed capacity. Legal entities engaged in generation activities can provide primary frequency control reserve amount that they are obliged to, from generation facilities registered to them or from another legal entity engaged in generation activity in accordance with the principles and procedures set forth in this Regulation.

(4) Legal entities engaged in generation activities cannot bid the reserves that they set aside for the purpose of primary frequency control under the third clause of this Article, to another market in the scope of balancing mechanism or cannot sell them through bilateral contracts.

(5) Generation facilities that are exempted from participating in primary frequency control referred to in the first clause of this Article are allowed to sign primary frequency control service agreement with TEAIS in order to provide primary frequency control service, if it is claimed by the related generation license holder legal entity and approved by TEIAS. Primary frequency control reserve amount provided by those generation facilities can be used so as to fulfill related generation license holder legal entity's and/or other generation license holder legal entity's primary frequency control obligations, and/or if it is required by TEAIS.

⁴ Added with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

(6) TEIAS shall make payment to the legal entities that provide primary frequency control service and engaged in generation activity at the fixed unit cost. Energy shortage or energy surplus that may occur as a result of the provision of primary frequency control service is evaluated as part of energy imbalance.

ARTICLE 11 Process regarding the provision of primary frequency control service

[Previous Article 11]

⁵(1) Provision of primary frequency control reserve amount is provided in accordance with primary frequency control service agreements and consists of the following steps:

a) TEIAS signs primary frequency control service agreements with license holder legal entities that own generation facilities, qualified as referred to in the first clause of the Article 10 of this Regulation. In these service agreements, there exist primary frequency control reserve capacity values of each generation facility obliged to participate in primary frequency control and these values are determined as a result of the primary frequency control performance tests made in line with the Electricity Market Grid Code.

b) System Operator determines primary frequency control reserve required by the system, and updates the minimum primary frequency control participation rate that each legal entity engaged in generation activity and obliged to participate in frequency control had to supply, in case of need. Primary frequency control participation rate is calculated by dividing the total primary frequency control reserve determined by the System Operator to the total installed capacity of all the generation facilities that are qualified as indicated in the first clause of the Article 10 of this Regulation and registered to the legal entities engaged in generation activity. The minimum primary frequency control participation rate of the legal entity engaged in generation activity and required to supply primary frequency control cannot be determined above %5. Primary frequency control participation rate is recalculated at least once in a year by TEIAS. The changes made in this rate come into effect with proposal of TEIAS and Board Decision. The changes made in the primary frequency control participation rate shall be determined at least 1 month before the date when the changes will become valid, and shall be announced to the legal entities engaged in generation activity by the System Operator via MMS.

c) Primary frequency control reserve amount that each legal entity engaged in generation activity obliged to provide is calculated by multiplying the primary frequency control participation rate with the total installed capacity of the generation facilities that take part within the frame of primary frequency control service agreement made by the related legal entity and are obliged to participate in primary frequency control service as per the first clause of the Article 10 of this Regulation.

ç) In case legal entities engaged in generation activity cannot supply primary frequency control reserve amount that they are obliged to or they do not prefer to supply it from their generation facilities, these legal entities can provide the total or a part of the primary frequency control reserve amount that they are obliged to, from another legal entity engaged in generation activity provided that the approval is received from the System Operator.

d) Legal entities engaged in generation activity and who have signed primary frequency control service agreement notify System Operator on an hourly basis via MMS everyday no later than 16:00 o'clock together with the final day ahead generation/consumption schedules, regarding primary frequency control reserve amount of the following day that will be supplied from the generation facilities registered to them and/or from another legal entity. The notified amounts shall be in the range between maximum and

the minimum primary frequency control reserve capacity that can be supplied in MW terms by the generation facilities as stated in the primary frequency control service agreements.

e) Legal entities engaged in generation activity and having thermal, natural gas, hydraulic and other plant types in their portfolio who have signed primary frequency control service agreement shall notify System Operator of the primary frequency control reserve amount of the following day that will be supplied from the generation facilities registered to them if possible, prioritizing the thermal generation facilities.

f) By controlling notifications made by the legal entities engaged in generation activity, every day until 17:00 o'clock, System Operator determines whether notifications violate system constraints and whether these notifications are within the maximum and minimum primary frequency control reserve capacities determined in the primary frequency control service agreement. System Operator contacts with the related legal entity and allows for one hour for making required arrangements regarding inappropriate notifications. If the changes create a need for a change in offers and bids provided as part of balancing power market, this situation is evaluated as a technical requirement regarding changes made in the offers submitted to the balancing power market as part of Electricity Market Balancing and Settlement Regulation.

g) In case legal entities cannot fulfill primary frequency control reserve amount obligations that they commit to supply on their own behalf or through another generation license holder legal entity as a result of the notifications made to the System Operator by the legal entities engaged in generation activity, required primary frequency control reserve is provided by the System Operator by taking into account up-regulation and down-regulation offers and bids of the generation facilities qualified as a balancing entity. Tag value of the instructions given within this context is determined as 2 (two). The cost that grows regarding instructions having the tag value of 2, given in this context, is calculated pursuant to **ARTICLE 26** of this Regulation and is paid via system operation cost. The penal sanctions addressed in the fifth and sixth clauses of Article 16 of this Regulation are applied to these generation license holder legal entities that are not fulfilled their generation facilities.

ğ) Legal entities engaged in generation activity participate in primary frequency control by keeping the capacity available equal to the primary frequency control reserve amount which they notified to the System Operator and approved by the System Operator, and by giving primary frequency control response.

ARTICLE 12 Primary frequency control service agreements

[Previous Article 12]

(1) Standard primary frequency control service agreements, that are prepared by TEIAS and approved by the Board, regarding the provision of primary frequency control service, are signed between the legal entities engaged in generation activity and obliged to participate in primary frequency control, and the legal entities engaged in generation activities approved by TEIAS who are exempt from participating in primary frequency control, but willing to participate voluntarily. With legal entities engaged in generation activity that will participate in primary frequency control within this context, a single primary frequency control service agreement shall be signed that will cover all of the generation facilities that will provide primary frequency control service.

(2) A primary frequency control service agreement shall be signed between TEIAS and license holder legal entity that will engage in generation activity before the completion of the provisional acceptance procedures so that the new generation facility qualified as indicated in the first clause of the **ARTICLE 10** of this Regulation begins commercial operation; otherwise, mentioned generation facility shall be taken into the scope of the

primary frequency control service agreement that have been signed previously by the related legal entity engaged in generation activity.

⁵(3) Related generation facility is excluded from the scope of the primary frequency control service agreement if the transfer of a generation facility that is within the scope of the primary frequency control service agreement and the transfer of this facility's license to another legal entity, and the termination of the license duration or the cancellation of the license within the frame of the clauses of the Electricity Market License Regulation published in the Official Gazette no. 24836 dated 4/8/2002 are recognized. If the license of the related generation facility is transferred to another legal entity, primary frequency control service agreement shall be signed with the legal entity holding generation facility's license, or mentioned generation facility shall be included within the scope of a primary frequency control service agreement that is already signed by the related legal entity engaged in generation activity.

(4) Primary frequency control service agreements that will be signed between legal entities engaged in generation activity and TEIAS shall include at least the following information and documents;

a) Documents that cover primary frequency control performance test results regarding the fulfillment of the primary frequency control requirements aforementioned in the Electricity Market Grid Code for each generation facility that is in the scope of the primary frequency control service agreement,

b) Primary frequency control reserve amount that the legal entity engaged in generation activity has to supply in MW terms,

c) A covenant indicating that the primary frequency control amount equal to the obligation is guaranteed to be supplied, provided that the declared limits of the agreement are to be preserved,

ç) Information indicating which of the generation facilities registered to the related legal entity is to be encompassed by the agreement, and technical specifications of the mentioned generation facilities,

d) For the generation facilities taking place within the scope of the agreement, the minimum and the maximum primary frequency control reserve capacities in MW terms and determined in consequence of the primary frequency control performance tests.

ARTICLE 13 Transfer of the primary frequency control obligation

[Previous Article 13]

(1) Legal entities can supply all or a part of the primary frequency control reserve amount that they are obliged to, from another legal entity engaged in generation activity and has signed primary frequency control service agreement.

(2) In order that primary frequency control reserve amount can be provided by another legal entity engaged in generation activity, legal entity obliged to supply primary frequency control service due to the primary frequency control service agreement, and legal entity to whom the obligation is transferred shall notify System Operator via MMS, on day ahead until 16:⁰⁰ o'clock.

(3) The transfer of the obligation regarding primary frequency control comes into effect along with the approval of the System Operator.

⁵ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

ARTICLE 14 Primary frequency control unit service cost calculation

[Previous Article 14]

(1) Price-Fixing Commission shall determine the unit service cost (TL/MWh); that will be paid to the legal entities engaged in generation activity and providing primary frequency control service, for the periods of three months. Hourly primary frequency control facility capacity cost for each generation facility shall be calculated according to the following formula:

$$TKB_{u,s} = \max\left[\left(\left(SMF_{s,d-3} \times (OSMF_{d-1} / OSMF_{d-5})\right) - \left(TF_{y,u,d-3} \times (OTF_{y,u,d-1} / OTF_{y,u,d-5})\right)\right), 0\right] \times SYD_s \quad (1)$$

(2) where;

$TKB_{u,s}$ is the Facility Capacity Cost that emerges due to the provision of Primary Frequency Control for generation facility “u” at hour “s” regarding the period “d+1” when the calculated primary frequency control unit service cost will be valid (TL/MWh),

$SMF_{s,d}$ is the Hourly System Marginal Price regarding hour “s” of the period “d” which is announced via MMS and calculated pursuant to Electricity Market Balancing and Settlement Regulation (TL/MWh),

$OSMF_d$ is the Average Hourly System Marginal Price regarding the period “d” (TL/MWh),

$TF_{y,u,d}$ is the average among “y” fuel type generation facilities of the weighted average of the offer prices of the “y” fuel type generation facility, that is valid for each generation facility based on fuel type “y” and submit offer for each hour of the period “d” that will be used for generation facility “u” based on fuel type “y” (TL/MWh),

$OTF_{y,u,d}$ is the Average Offer Price that is calculated by taking the average among “y” fuel type generation facilities of the weighted average of the offer prices of the “y” fuel type generation facility, that is valid for each generation facility based on fuel type “y” and submit offer for each hour of the period “d” that will be used for generation facility “u” based on fuel type “y” (TL/MWh),

SYD_s is the System Status Variable that takes the value of 1 in case of energy shortage in the system at hour “s”, and that takes the value of 0 in case of energy surplus or the equilibrium of the system,

d is the each period covering 3 months that is used in the primary frequency control unit cost calculations,

d-K is the period that begins (3xK) month before the beginning of the period d when the primary frequency control unit service cost is calculated, and that terminates 3x(K-1) month before.

(3) Primary frequency control unit service cost shall be calculated by the Price-Fixing Commission in accordance with the following formula:

$$PBHB_{d+1} = \left(\sum_{u=1}^k \sum_{s=1}^m (TKB_{u,s} \times KG_u \times PKO) \right) / \left(\sum_{u=1}^k (KG_u \times PKO) \times m \right) \quad (2)$$

(4) where;

$PBHB_{d+1}$ is the Primary Frequency Control Unit Service Cost regarding the period “d+1” (TL/MWh),

$TKB_{u,s}$ is the Facility Capacity Cost that is calculated pursuant to the first clause of this Article and that emerges as a result of the provision of

Primary Frequency Control for generation facility “u” at hour “s” (TL/MWh),
 KG_u is the Installed Capacity of the generation facility “u” (MW),
 PKO is the Valid Primary Frequency Control Participation Rate,
 d+1 is the three-month period when the determined primary frequency control unit service cost will be effective,
 k is the number of generation facilities qualified as indicated in the first clause of the ARTICLE 10 of this Regulation,
 m is the number of hours within the period d-3,

(5) Unit service cost determined by the Price-Fixing Commission is submitted to Authority by TEIAS, at least 1 month before the beginning of the period when the cost will be valid, and it becomes valid with the approval of the Board so as to be applied fixed to all legal entities engaged in generation activity and provide primary frequency control service.

(6) Payments made to the legal entities engaged in generation activity in accordance with the signed primary frequency control service agreement, are made on the basis of the unit service cost for the total time and amount these legal entities provide primary frequency control.

ARTICLE 15 Pricing of the primary frequency control service

[Previous Article 15]

⁶(1) The amount that will be paid for an invoicing period to the legal entities who have provided primary frequency control service according its own and taken over obligations, in accordance with the primary frequency control service agreement, is calculated according to the following formula:

$$PFKT_{p,f} = \sum_{p=1}^l \left(PBHB_f \times \sum_{s=1}^k (PFKRM_{p,f,u,s} \times KS_{p,f,u,s}) \times CK_{p,f,u} \right) \quad (3)$$

(2) where;

PFKT_{p,f} is the amount that will be accrued due to total primary frequency control reserve amount that was provided by the legal entity “p” engaged in generation activity at invoicing period “f” (TL),

PBHB_f is the Primary Frequency Control Unit Service Cost that is approved by the Board for the invoicing period “f” and that is calculated pursuant to the first clause of the Article 14 of this Regulation (TL/MWh),

PFKRM_{p,f,u,s} is the Primary Frequency Control Reserve Amount that will be provided at hour “s” of the invoicing period “f” approved by the System Operator and notified to the System Operator via MMS by the settlement aggregation entity qualified as generation facility “u” that is registered to the legal entity “p” engaged in generation activity (MW),

KS_{p,f,u,s} is the Participation Duration (hour) of the settlement aggregation entity qualified as generation facility “u” registered in the name of the legal entity engaged in generation activity to primary frequency control that generation facility “u” that takes value of “1” when it is determined by the related RLDC that it is operated in a way to react in primary frequency and provide the primary frequency control reserve and that takes value of “0” when it is determined out that it does not provide the primary frequency control reserve amount at least once at “s” hour,

CK_{p,f,u} is the Penal Coefficient of the settlement aggregation entity qualified as generation facility “u” registered in the name of the legal entity engaged in generation activity, which is determined as “1” in case the primary frequency control penal amount

⁶ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

calculated under Article 16 of this Regulation for invoicing period "f" as "1" and as "0" otherwise,

K is the number of hours within the invoicing period "f",

l is the number of settlement aggregation entities that supply primary frequency control service and registered to the legal entity "p" engaged in generation activity, and that is qualified as generation facility.

(3) Data and information that are taken into consideration by the RLDCs to determine participation duration to primary frequency control and delivery coefficient aforementioned in the clause 1 and 2 of this Article are as follows:

a) Data and information obtained from recording machines existing in the generation facilities providing primary frequency control,

b) Data and information obtained from TEIAS's SCADA system,

c) Notifications made by the related generation license holder legal entities via MMS,

ç) Notifications made by the related generation license holder legal entities to the System Operator and/or RLDC regarding availability of the generation facilities,

(4) In case a generation facility that has notified System Operator to provide primary frequency control reserve amount is disabled as a result of a down-regulation instruction that it takes from the System Operator as part of balancing power market, related generation facility is deemed to have supplied the primary frequency control reserve amount that is notified day ahead for this duration, and this duration is added to the primary frequency control participation duration. The liability resumes as the increase in the generation facility up to the minimum consistent production level after the YAT instruction given ends.⁷

(5) The checkpoints including at least one deviation with biggest deviation exceeding ± 50 mHz that occur with eight hour intervals in the system frequency are chosen with the sampling method by the NLDC and notified to the manufacturers and RLDC. In order for the RLDC's to check the primary frequency control responses of the generation facilities providing primary frequency control service within the notified situations, whether the primary frequency control reserve amounts are provided in proportion with the changes and velocity gradient specified in MMS occurring within the frequency is investigated. The participation value concerning the generation facilities providing the notified reserve amount within the scope of tolerance level indicated in the Electricity Market Grid Code is determined as "1" while the generation facilities determined to respond apart from indicated tolerance is determined as "0". In case they provide the primary frequency control that has been notified by the generation facilities within the tolerance specified in the Electricity Market Grid Code in both successive checkpoints determined by NLDC, the primary frequency control service will be deemed to be provided for the hours between such checkpoints. For the checkpoints where it is determined by NLDC that the generation facility cannot provide the primary frequency control response, the hours without response in proportion with the changes exceeding ± 50 mHz and the velocity gradient occurring in the frequency between the previous and next checkpoints will be determined and the participation period value for these hours will be set as "0". Penal sanctions that are indicated in Article 16 of this Regulation are imposed to generation license holder legal entities in case it is determined as a result of the investigations that primary frequency control response is not provided within the scope of the tolerance indicated in the Electricity Market Grid Code.

⁷ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

ARTICLE 16 Penal sanctions regarding primary frequency control service

[Previous Article 16]

⁸(1) Except for the occasions when a generation facility in service is disabled due to malfunction or a down-regulation instruction it has received from the System Operator within the scope of the balancing power market; if it is determined that a generation facility is found out to be serving the primary frequency control reserve amount notified to the System Operator out of the tolerance stated in Electricity Market Grid Code, the penal amount to be imposed on the generation license owner legal entity for such invoicing period is calculated according to the following formula.

$$PFKCT_{p,f} = \sum_{u=1}^l \left[PBHB_f \times \frac{\sum_{s=1}^k PFKRM_{p,f,u,s}}{BST_{p,f,u}} \times 5 \times \left(\left(\sum_{s=1}^k (1 - KS_{p,f,u,s}) \right) + 250 \right) \times \max \left(\min \left(\sum_{s=1}^k (1 - KS_{p,f,u,s}) - 10, 1 \right), 0 \right) \right]$$

(3/A)

(2) where;

$PFKT_{p,f}$ is Primary Frequency Control Penalty Amount that will be accrued due to the determination that the legal entity engaged in generation activity has served the primary frequency control reserve amount which had been notified to the System Operator out of the tolerance stated in Electricity Market Grid Code at invoicing period "f" (TL),

$PBHB_f$ is the Primary Frequency Control Unit Service Cost that is approved by the Board for the invoicing period "f" and that is calculated pursuant to the first clause of the Article 14 of this Regulation (YTL/MWh),

$PFKRM_{p,f,u,s}$ is the Primary Frequency Control Reserve Amount that will be provided at hour "s" of the invoicing period "f" approved by the System Operator and notified to the System Operator via MMS by the settlement aggregation entity qualified as generation facility "u" that is registered to the legal entity "p" engaged in generation activity (MW),

$BST_{p,f,u}$ is the Notification Period Total for the hours when the settlement aggregation entity qualified as generation facility "u" that is registered to the legal entity "p" engaged in generation activity primary and frequency control reserve amount notified to the System Operator is greater than "0" MW value (hour),

$KS_{p,f,u,s}$ is the Participation Duration (hour) of the settlement aggregation entity qualified as generation facility "u" registered in the name of the legal entity engaged in generation activity to primary frequency control that generation facility "u" that takes value of "1" when it is determined by the related RLDC that it is operated in a way to react in primary frequency and provide the primary frequency control reserve and that takes value of "0" when it is determined out that it does not provide the primary frequency control reserve amount at least once at "s" hour,

K is the number of hours within the invoicing period "f",

L is the number of settlement aggregation entities that supply primary frequency control service and registered to the legal entity "p" engaged in generation activity, and that is qualified as generation facility.

(3) In case the unit(s) of a generation facility in service cannot provide the primary frequency control reserve amount that it has notified due to a malfunction affecting its participation to the primary frequency control service or becomes disabled due to unexpected operation conditions or falls below the minimum consistence generation level, penal sanctions cited in the first and fifth clauses of this Article are not applied for the related day

⁸ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

on the condition that RLDC is notified verbally after the incident and later, in writing at the first following business day. In case such situations occur during any day after 8.00 o'clock, penal sanctions are not applied due to the fact that the legal entity engaged in generation activity has not been able to make primary frequency control reserve notification within the primary frequency control of the installed capacity of the generation facility of the legal entity engaged in generation activity and/or that they have not been able to provide services. The liability resumes as such situations are meanwhile remedied and as the increase in the generation facility up to the minimum consistent production level. If such situations continue for the following days, legal entity engaged in generation activity shall provide its obligations from another generation facility registered to him or by means of the transfer of obligations from another legal entity that is engaged in generation activity and have signed primary frequency control service agreement.⁹

(4) If the generation license owner legal entities determined to have provided the primary frequency control response out of the tolerance stated in Electricity Market Grid Code in accordance with the fifth paragraph of Article 15 fall within 60 hours and above, TEIAS issues a written warning to prevent the continuation of the violation. If the related legal entity engaged in generation activity continues the violation during any invoicing period following the warning notification within the related year, TEIAS applies to the Board with a report that includes the details of the violation.¹⁰

(5) If the legal entity engaged in generation activity determined to have committed a violation to notify the primary frequency control reserve amount that they are liable to provide in accordance with sub-clause (g) of the first clause of Article 11 including the liability transfers for 20 hours and above for an invoicing period, TEIAS issues a written warning to prevent the continuation of the violation. If the related legal entity engaged in generation activity continues the violation during any invoicing period following the warning notification within the related year, TEIAS applies to the Board with a report that includes the details of the violation.¹¹

(6) The Board imposes sanctions to the related legal entity engaged in generation activity according to the Article 11 of the Law in case violation is confirmed after examining the report."

⁹ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

¹⁰ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

¹¹ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

SECTION 4

Secondary Frequency Control

ARTICLE 17 Principles regarding the provision of secondary frequency control service

[Previous Article 17]

(1) All generation facilities with 100 MW and above installed capacity except mentioned below shall be obliged to supply secondary frequency control service via the equipment that receive and process the signals sent by the automatic generation control system as described in the Electricity Market Grid Code:

- a) Canal and river type hydroelectric generation facilities,
- b) Wind power based generation facilities,
- c) Solar power based generation facilities,
- ç) Wave power based generation facilities,
- d) Tidal power based generation facilities,
- e) Cogeneration facilities,
- f) Geothermal generation facilities,

g) Generation facilities that are active at the publication date of this Regulation and that are not equipped with Automatic Generation Control System.

(2) Legal entity that is engaged in generation activity and that has a generation facility qualified as indicated in the first clause of this Article shall apply TEIAS and sign secondary frequency control service agreement to participate in secondary frequency control. These legal entities shall participate in secondary frequency control in accordance with the agreement signed with TEIAS in case they are selected by TEIAS within the frame of the **ARTICLE 22** of this Regulation.

(3) Secondary frequency control reserve amount that will be provided by generation facilities qualified as indicated in the first clause of this Article is supplied by the related generation facilities in accordance with the instructions given by the System Operator as part of the procedures discussed in this Regulation.

(4) Generation facilities that are exempt from having the qualifications to provide secondary frequency service indicated in the first clause of this Article can sign secondary frequency control service agreement with TEIAS to provide secondary frequency control service, if it is claimed by the related generation license holder legal entity and if it is approved by TEIAS.

(5) System Operator shall select generation facilities that will provide secondary frequency control service by taking into consideration the system constraints so as to minimize total secondary frequency control service cost.

(6) For the payments made to the legal entities engaged in generation activity and supplying secondary frequency control service, average opportunity costs regarding the related generation facility shall be paid by TEIAS. Energy shortage or surplus resulting from the provision of secondary frequency control service is evaluated within the context of energy imbalance.

ARTICLE 18 Process regarding the provision of secondary frequency control service

[Previous Article 18]

(1) The provision of the secondary frequency control reserve amount is provided on the basis of this Regulation and secondary frequency control service agreements, and consists of following steps:

a) TEIAS signs secondary frequency control service agreements with licensed legal entities that have generation facilities qualified as indicated in the first clause of the ARTICLE 17 of this Regulation.

b) System Operator determines secondary frequency control reserve required by the system and announces it to the legal entities engaged in generation activity via MMS.

c) Everyday between 14:⁰⁰ and 15:⁰⁰ o'clock;

1) System Operator calculates the average opportunity cost of the generation facilities providing secondary frequency control service regarding previous day for each hour upon the system marginal price that is stated in the balancing power market regarding the related hour, and upon the offer prices regarding the related generation facility by using the formula indicated in the ARTICLE 24,

2) System Operator notifies generation facilities that have supplied secondary frequency control about the emerged average opportunity costs.

ç) Legal entities that have signed secondary frequency control agreement and engaged in generation activity give offers and bids to the balancing power market without allocating any secondary frequency control reserve amount.

c) Everyday between 14:⁰⁰ and 15:⁰⁰ o'clock;

1) System Operator determines generation facilities that will supply secondary frequency control service for each hour of the following day upon the principles indicated in the ARTICLE 22, via MMS's secondary frequency control module.

2) System Operator gives instructions to generation facilities that will supply secondary frequency control service, regarding the secondary frequency control reserve amount that they are obliged to supply.

e) Generation facilities that will provide secondary frequency control service participate in the secondary frequency control by keeping the capacity available equal to the secondary frequency control reserve amount notified by the System Operator, and by giving secondary frequency control response.

ARTICLE 19 Secondary frequency control service agreements

[Previous Article 19]

(1) Standard secondary frequency control service agreements that are prepared by TEIAS and approved by the Board are signed between TEIAS and license holder legal entity that have generation facility qualified as indicated in the first clause of the ARTICLE 17 of this Regulation. A single secondary frequency control service agreement that will cover all generation facilities qualified as indicated in the first clause of the ARTICLE 17 of this Regulation shall be signed with each legal entity engaged in generation activity that own license for generation facility obliged to participate in secondary frequency control.

(2) A secondary frequency control service agreement shall be signed between TEIAS and related license holder legal entity that will engage in generation activity before the completion of provisional acceptance procedures to make a new generation facility qualified as indicated in the first clause of the ARTICLE 17 of this Regulation begin commercial operation; otherwise, mentioned generation facility shall be taken into the scope of a

secondary frequency control service agreement that has been signed previously by the legal entity engaged in generation activity.

(3) Secondary frequency control service agreements that will be signed between TEIAS and legal entities engaged in generation activity shall include, at least, the following information and documents;

a) Documents covering secondary frequency control performance test results regarding the fulfillment of secondary frequency control requirements by the legal entities engaged in generation activity for each generation facility that is in the scope of secondary frequency control service agreement,

b) A covenant indicating that secondary frequency control amount is guaranteed to be supplied, provided that the declared limits of the agreement are to be preserved, in case instructed by the System Operator,

c) Information indicating which of the generation facilities registered to the related legal entity that will be encompassed by the agreement and technical specifications of the mentioned generation facilities,

ç) For the generation facilities taking place within the scope of the agreement, secondary frequency control reserve capacities in MW terms and determined in consequence of the secondary frequency control performance tests.

ARTICLE 20 Transfer of the secondary frequency control obligation

[New Article, harmonization with EB NC Article 34]

(1) Legal entities can supply all or a part of the secondary frequency control reserve amount that they are obliged to, from another legal entity which has signed secondary frequency control service agreement.

(2) In order that secondary frequency control reserve amount can be provided by another legal entity engaged in generation activity, legal entity obliged to supply secondary frequency control service due to the secondary frequency control service agreement, and legal entity to whom the obligation is transferred shall notify System Operator via MMS, on day ahead until 18:30 o'clock.

(3) The transfer of the obligation regarding secondary frequency control comes into effect along with the approval of the System Operator.

ARTICLE 21 Calculation and notification of the average opportunity cost

[Previous Article 20]

(1) Every day between 14:⁰⁰ – 15:⁰⁰ o'clock, System Operator calculates the average opportunity costs of the generation facilities that provide secondary frequency control service for each hour of the previous day on the basis of the formula indicated in **ARTICLE 24** by taking into consideration system marginal prices that are calculated at the balancing power market for the related hours, and offer prices of the related generation facility. Average opportunity cost is zero for the hours when the system is in the direction of down-regulation in the balancing power market. System Operator notifies emerged average opportunity cost to the generation facilities that provided secondary frequency control.

ARTICLE 22 Selection of the generation facilities that will provide secondary frequency control

[Previous Article 21]

(1) Selection of the generation facilities that will provide secondary frequency control is made by considering system constraints and so as to minimize secondary frequency control cost for the whole system via MMS's secondary frequency control module by taking into consideration final day ahead generation/consumption schedules, and offers and bids given to the balancing power market.

(2) Selection of the generation facilities that will provide secondary frequency control is made every day between 17:⁰⁰ and 18:³⁰ o'clock for each hour of the related day and consists of the following steps:

a) Weighted average of the generation facilities' offers for the generation facilities at the level of FDGS allowing the supply of secondary frequency control and that are qualified as indicated in the first clause of the ARTICLE 17 of this Regulation, are ranked according to the diminishing price for each hour by the System Operator. While ranking, prices are determined by taking into account the weighted average of the offer prices of each generation facility and amounts are determined by taking into account the maximum and the minimum secondary frequency control reserve capacities of the generation facilities.

b) Generation facilities that will provide secondary frequency control are selected in a way as to meet the required secondary frequency control reserve in accordance with the ranking starting from the generation facility having the highest average offer price to the decreasing average offer price for each hour of the related day.

(3) Following steps are implemented in case total secondary frequency control reserve amount of the generation facilities, ranked at any hour become insufficient to supply required secondary frequency control reserve.

a) With up-regulation and down-regulation instructions, a capacity for supplying secondary frequency control response is formed by taking into consideration the system constraints and in a way that the associated cost is minimized and making selection among the offers and bids that are ranked according to their prices for the related hour within the context of balancing power market and that are submitted by the balancing entities providing secondary frequency control response.

b)¹²

(4) In case availability of the generation facilities, instructed by the System Operator to provide secondary frequency control service, change after 18.30 o'clock, System Operator may determine the generation facilities that will provide the secondary frequency control service by applying the methods mentioned in the second and third clauses of this Article and call them to provide service by giving instructions to these generation facilities.

¹³(5) Up-regulation and down-regulation instructions that are given to form capacity to provide secondary frequency control response or are tagged with code 2 (two) and they are not taken into account while determining system marginal price for the related hour.¹⁴

ARTICLE 23 Instructions regarding secondary frequency control service

[Previous Article 22]

(1) Secondary frequency control reserve amount that should be provided for each hour of the related day is firstly notified via MMS to generation facilities that are selected to provide secondary frequency control service. Notifications made through MMS shall also be notified via telephone, if required.

(2) Generation facilities that are selected to provide secondary frequency control service shall generate energy in a way that would ensure secondary frequency control reserve

¹² Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

¹³ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

¹⁴ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

amount stated in the instructions. In order to eliminate violations, System Operator gives written warning to the related generation facilities that do not perform instructions as it is notified by the System Operator without any acceptable reason. If the related generation facility insists on violation TEIAS applies to the Board with a report that includes the details of the violation.

¹⁵(3) The Board imposes sanctions to the related legal entity engaged in generation activity according to the Article 11 of the Law in case violation is confirmed after examining the report.

ARTICLE 24 Pricing of the secondary frequency control service

[Previous Article 23]

(1) Payment of the legal entities engaged in generation activity on account of generation facilities registered to them is made upon the secondary frequency control service cost that exactly meets average opportunity cost. Secondary frequency control service cost shall be calculated according to the following formula:

$$SFKT_{f,p} = \sum_{u=1}^k \sum_{s=1}^m (\max((SMF_{f,s} - YALTF_{f,p,u,s}), 0)) \times [SRM_{f,p,u,s} - \max((DM_{f,p,u,s}), 0)] \times (SKS_{f,p,u,s} \div 60)$$

(4)

(2) where;

$SFK_{Tf,p}$ is the amount of receivable which will be accrued due to total secondary frequency control reserve amount realized in the invoicing period “f” regarding the legal entity “p” engaged in generation activity (TL),

$SMF_{f,s}$ is the hourly System Marginal Price regarding the hour “s” of the invoicing period “f” which is calculated as part of Balancing Power Market and announced via MMS by calculating pursuant to Electricity Market Balancing and Settlement Regulation (TL/MWh),

$YALTF_{f,p,u,s}$ is the weighted average of the Offer Prices regarding the hour “s” of the invoicing period “f” applied for generation facility “u” that is registered to the legal entity “p” engaged in generation activity (TL/MWh),

$SRM_{f,p,u,s}$ is the Secondary Frequency Control Reserve Amount regarding the hour “s” of the invoicing period “f” instructed by the System Operator to be supplied by generation facility “u” registered to the legal entity “p” engaged in generation activity (MWh),

$DM_{f,p,u,s}$ is the Imbalance Volume of the generation facility “u” that is registered to the legal entity “p” engaged in generation activity regarding the hour “s” of the invoicing period “f”, which is calculated pursuant to ARTICLE 25, (MWh),

$SKS_{f,p,u,s}$ is the Secondary Frequency Control Participation Duration of the settlement aggregation entity qualified as generation facility “u” that is registered to legal entity “p” engaged in generation activity, which is determined by the System Operator for hour “s” of the invoicing period “f” (minute),

m is the number of hours at the invoicing period “f”,

¹⁵ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

k is the number of generation facilities qualified as indicated in the first clause of the ARTICLE 17

of this Regulation and that is registered to legal entity “p” engaged in generation activity.

(3) In addition to the secondary frequency control service cost, Imbalance Refund is also paid to the legal entities engaged in generation activity registered in the name of their generation facilities chosen to supply secondary frequency control services. Imbalance Refund shall be calculated according to the following formula:¹⁶

$$DGÖ_{f,p} = \sum_{u=1}^k \left[\sum_{s=1}^m (DM_{f,u,s} \times (SGÖF_{f,s} - SMF_{f,s}) \times DK_s) \right] \quad (4a)$$

(4) where;

$DGÖ_{Tf,p}$ is the amount of receivable which will be accrued due to total secondary frequency control reserve amount realized in the invoicing period “f” regarding the legal entity “p” engaged in generation activity (TL),

$DM_{f,u,s}$ is the Imbalance Amount of the generation facility “u” for hour “s” of the invoicing period “f” (MWh),

$SMF_{f,s}$ is the hourly System Marginal Price regarding the hour “s” of the invoicing period “f” which is calculated as part of Balancing Power Market and announced via MMS by calculating pursuant to Electricity Market Balancing and Settlement Regulation (TL/MWh),

$SGÖF_{f,s}$ is the Day Ahead Price calculated in accordance with the Electricity Market Balancing and Settlement Regulation implementation concerning the hour “s” of invoicing period “f” (TL/MWh),

DK_s is the Imbalance Coefficient having value “1” when there is energy shortage within the system for the hour “s” and the imbalance amount of the legal entity engaged in generation activity and the imbalance amount of the related generation facility is negative due to the secondary frequency control supplication and the imbalance amount in the related generation facility and the energy imbalance amount of the legal entity engaged in generation activity is positive due to the supplication of the secondary frequency control; otherwise having value “0”,

m is the number of hours at the invoicing period “f”,

k is the number of generation facilities qualified as indicated in the first clause of the Article 17 of this Regulation and that is registered to legal entity “p” engaged in generation activity.¹⁷

(5) Imbalance Refund calculated in accordance with the formula stated in the third clause is paid to legal entities engaged in generation activity registered in the name of their generation

¹⁶ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

¹⁷ Added with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

facilities chosen to supply secondary frequency control services in each occasion when the DK_s coefficient is "1". The secondary frequency control service cost is paid to such legal entities engaged in generation activity over the cost calculated in accordance with the formula stated in the first clause and reflecting the average opportunity cost. An additional average opportunity cost payment is not made to provide secondary frequency control response for the capacity that is formed with up-regulation and down-regulation instructions. No payment is made to the generation facilities that do not receive instructions regarding secondary frequency control; although, they are included within the scope of the secondary frequency control service agreement.¹⁸

ARTICLE 25 Calculation of the hourly energy imbalance amount of the generation facility

[Previous Article 24]

(1) Energy imbalance amount of each generation at each hour for an invoicing period shall be calculated according to the following formula:

$$DM_{f,u,s} = (VM_{f,u,s} - \zeta M_{f,u,s}) - KG\ddot{U}P_{f,u,s} + \left(\sum_{r=1}^{t2} KEYATM_{f,u,s,r} - \sum_{r=1}^{t1} KEYALM_{f,u,s,r} \right) \quad (5)$$

(2) where;

$DM_{f,u,s}$ is the Imbalance Amount of the generation facility "u" for hour "s" of the invoicing period "f" (MWh),

$VM_{f,u,s}$ is the Supply Volume of the generation facility "u" for hour "s" of the invoicing period "f" on the basis of a nominal connection point (MWh),

$\zeta M_{f,u,s}$ is the Withdrawal Volume of the generation facility "u" for hour "s" of the invoicing period "f" on a basis of nominal connection point (MWh),

$KG\ddot{U}P_{f,u,s}$ is the Final Day Ahead Generation/Consumption Schedule that is applied for generation facility "u" at hour "s" of the invoicing period "f" (MWh),

$KEYALM_{f,u,s,r}$ is the Accepted and Fulfilled Offer Volume of offer "r" of the generation facility "u" that is applied for hour "s" of the invoicing period "f" (MWh),

$KEYATM_{f,u,s,r}$ is the Accepted and Fulfilled Bid Volume of offer "r" of the generation facility "u" that is applied for hour "s" of the invoicing period "f" (MWh),

t1 is the total number of the offers accepted as part of balancing power market, for generation facility "u" regarding hour "s",

t2 is the total number of the bids accepted as part of balancing power market, for generation facility "u" regarding hour "s",

ARTICLE 26 Cost of reserve forming for ancillary services

[Previous Article 25]

¹⁸ Added with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

(1) The cost arising as a consequence of up-regulation, down-regulation instructions having the code 2 and that will be met by the system operating cost to form reserve within the scope of ancillary services is calculated according to the following formula:

$$YHRB = \sum_{d=1}^k \left(\sum_{u=1}^m \left(\sum_{r=1}^n \left(KEYATM_{d,u,r}^2 \times YATF_{d,u,r} \right) \right) - \sum_{u=1}^m \left(\sum_{r=1}^l \left(KEYALM_{d,u,r}^2 \times YALF_{d,u,r} \right) \right) \right) \quad (6)$$

(2) where;

- YHRB** is the Ancillary Services Reserve Cost of an invoicing period (TL),
- KEYATM_{d,u,r}²** is the Accepted and Fulfilled Bid Volume that is calculated pursuant to Electricity Market Balancing and Settlement Regulation, and that has the tag value of 2 (two) of the offer “r” valid for settlement period “u” of the balancing entity “d” (MWh),
- YATF_{d,u,r}** is the Bid Price that is calculated pursuant to Electricity Market Balancing and Settlement Regulation, and that will be applied for bid “r” valid for settlement period “u” related to balancing entity “d” as part of balancing power market (TL/MWh),
- KEYALM_{d,u,r}²** is the Accepted and Fulfilled Offer Volume that is calculated pursuant to Electricity Market Balancing and Settlement Regulation, and that has the tag value of 2 (two) of the offer “r” valid for settlement period “u” related to balancing entity “d” as part of balancing power market (MWh),
- YALF_{d,u,r}** is the Offer Price that is calculated pursuant to Electricity Market Balancing and Settlement Regulation, and that will be applied for the offer “r” valid for settlement period “u” related to balancing entity “d” as part of balancing power market (TL/MWh),
- k** is the number of balancing entities that serve within the scope of ancillary service regarding the related invoicing period and that have received instruction with the tag value of 2 (two),
- n** is the number of bids that have the tag value of 2 (two) accepted for the settlement period “u” regarding balancing entity “d” as part of balancing power market
- l** is the number of offers that have the tag value of 2 (two) accepted for the settlement period “u” regarding balancing entity “d” as part of balancing power market,
- m** is the number of balance responsible parties from which the market participant “p” purchases electricity, for trade zone “t” in settlement period “u”.¹⁹

Ancillary services reserve cost that is calculated within the frame of the first clause of this Article and that is met via the system operating cost is transferred in relation with the balancing power market activities to the account of the Market Operator.

¹⁹ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

SECTION 5

Non-Spinning Reserves

ARTICLE 27 Principles regarding the provision of non-spinning reserve

[Previous Article 26]

(1) Principles regarding the provision of non-spinning reserves consist of opportunity for the generation facilities that could not have sold their capacity through bilateral contracts, day ahead market and balancing power market to offer these generation capacities to the System Operator, the utilization of this capacity by the System Operator, the activities regarding payable-receivable transactions that may result from these processes, and the technical and administrative procedures.

(2) Non-spinning reserves are supplied via tenders, when deemed necessary by the System Operator.

(3) Non-spinning reserves are provided from generation facilities that ensure characteristics indicated in the Electricity Market Grid Code regarding the non-spinning reserves, and start-up duration, loading speed, and minimum bid volume indicated in the call for tender, but that cannot submit bids in the balancing power market during the period when they are not active.

(4) License holder legal entities that have generation facilities registered under their own accounts and qualified as indicated in the third clause of this Article, can participate in tenders conducted by the System Operator to supply non-spinning reserve, and can submit bid on account of their generation facilities qualified as indicated.

(5) System Operator shall select generation facilities that will supply non-spinning reserve by taking into consideration the system constraints and in a way as to minimize the total non-spinning reserve provision cost as indicated in the **ARTICLE 31** and **ARTICLE 32**.

(6) Selection of a generation facility by the System Operator for a particular period to provide non-spinning reserve does not pose an obstacle for the related generation facility to sell its capacity via bilateral contracts, day-ahead market and balancing power market, or to use this capacity for other ancillary services. Legal entities engaged in generation activity receive payment only for the period when they supply non-spinning reserve with their generation facilities selected by the System Operator to supply non-spinning reserve.

ARTICLE 28 The process of non-spinning reserve service provision

[Previous Article 27]

(1) The provision of the non-spinning reserve is provided based on the principles of this Regulation and consists of following steps:

a) Annually, TEIAS forecasts non-spinning reserve which will be required monthly by the system, average generation volume which is expected to be supplied per start-up by generation facilities that will supply non-spinning reserve, and the number of expected start-up that generation facilities perform in order to provide non-spinning reserve. These annual forecasts are updated by TEIAS, if required.

b) Until 20th day of the related month up to 17:00 o'clock, System Operator publishes call for tender regarding non-spinning reserve via MMS if organization of a tender is deemed necessary by TEIAS due to the non-spinning reserve requirement of the following month.

c) Until 25th day of the related month up to 17:00 o'clock, legal entities engaged in generation activity submit bids to supply non-spinning reserve for the following month from their generation facilities qualified as indicated in the third clause of the **ARTICLE 27** of this Regulation.

ç) Until 28th day of the related month up to 17:00 o'clock, TEIAS orders all the bids according to price as indicated in **ARTICLE 31** and selects bids covering the prescribed non-spinning reserve amount that will be required by the System for the related month, and informs all bidders.

d) Selected generation facilities stay available during the related month to start-up within the start-up duration determined in the call for tender, when they do not make generation, in case it is instructed.

e) Everyday, bids of the generation facilities which are selected by the System Operator to provide non-spinning reserve so as to ensure the provision of the sufficient capacity for the balancing power market are evaluated and related generation facilities are informed on instructions regarding accepted bids. Notifications regarding the termination of the instructions are made to the related generation facility.

f) Generation facilities that will supply non-spinning reserve start-up and make generation for the instructed time and amount in line with the real time instructions of the System Operator.

ARTICLE 29 Structure and content of the bids regarding supply of non-spinning reserve

[Previous Article 28]

(1) Legal entities that are engaged in generation activity and that submit bid to provide non-spinning reserve from generation facilities registered under their own account notify System Operator on a generation facility basis via MMS about their bids regarding the possible generation increase that will be realized within the maximum loading period determined in the call for tender as of the start-up of the related generation facility, to be valid in the following month.

(2) Bids regarding the provision of non-spinning reserve include;

a) Unit price demanded to be available for the start-up within start-up duration as determined in the call for tender (TL/hour),

b) Price demanded for each start-up within the start-up duration as of System Operator's instruction (TL),

c) Generation increase volume in MW terms that can be actualized within the maximum loading period thereafter the start-up of the related generation facility,

d) Unit price demanded for this increase (TL/MWh).

(3) All bid prices are at least equal to zero or greater than zero, they have one per cent sensitivity, and they are in Turkish official currency terms.

(4) Required minimum generation increase after the start-up of the generation facility is indicated by the System Operator in the call for tender. All bid volumes regarding the provision of non-spinning reserve are represented in 1 MW term and its folds.

(5) Bids regarding the provision of non-spinning reserve shall cover the total of the generation increase volume that can be actualized at the maximum loading period thereafter the start-up of the generation facility.

ARTICLE 30 Submission of the bids regarding supply of non-spinning reserve

[Previous Article 29]

(1) Until the 25th day of each month up to 17:⁰⁰, legal entities engaged in generation activity submit their bids on the basis of generation facility to the System Operator through MMS regarding supply of non-spinning reserve from their generation facilities qualified as indicated in the third clause of the **ARTICLE 27** of this Regulation.

ARTICLE 31 Price rating and selection of the generation facilities that can provide non-spinning reserve

[Previous Article 30]

²⁰(1) Estimated non-spinning reserve amount that is the basis for the price rating required for the selection of the generation facilities that provide non-spinning reserve shall be calculated according to the following formula:

$$TBYT_{u,d} = (TUM_d \times BYTF_{u,d} + DGTF_{u,d}) \times TDGS_{u,d} + EABTF_{u,d} \times SS_d \quad (7)$$

(2) where;

$TBYT_{u,d}$ is the Estimated Non-spinning Reserve Amount that corresponds to the non-spinning reserve amount estimated to be provided by the generation facility “u” within period “d” (YTL),

TUM_d is the Estimated Generation Volume that is estimated to be provided by each generation facility that will provide non-spinning reserve, at each start-up within period “d” (MWh),

$BYTF_{u,d}$ is the Non-spinning Reserve Bid Price regarding generation facility “u” valid for period “d” (TL/MWh),

$DGTF_{u,d}$ is the Start-up Bid Price regarding generation facility “u” to provide non-spinning reserve within period “d” (TL),

$TDGS_{u,d}$ is the Estimated Number of Start-ups regarding generation facility “u” to provide non-spinning reserve within period “d”,

$EABTF_{u,d}$ is the Availability Bid Price regarding generation facility “u” to provide non-spinning reserve within period “d” (YTL/h),

SS_d is the Hour Count within period “d”

(3) Estimated non-spinning reserve amount regarding each generation facility that has a valid bid to provide non-spinning reserve is calculated by TEIAS according to the formula indicated in the first clause of this Article. Bids covering the non-spinning reserve that is prescribed to be required by the system for the related month are selected by rating the calculated estimated amount and all bidders are notified through MMS.

ARTICLE 32 Evaluation of the generation facilities that will provide non-spinning reserve

[Previous Article 31]

²⁰ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

(1) Estimated non-spinning reserve unit price that is the basis for price rating required for the evaluation of the chosen generation facilities to provide non-spinning reserve shall be calculated according to the following formula:

$$TBYBF_{u,d} = \left(\frac{T\dot{U}M_d \times BYTF_{u,d} + DGTF_{u,d}}{T\dot{U}M_d} \right) \quad (8)$$

(2) where;

$TBYBF_{u,d}$ is the Estimated Non-spinning Reserve Unit Price corresponds to non-spinning reserve amount that is estimated to be provided by generation facility “u” within period “d” through each start-up (YTL),

$T\dot{U}M_d$ is the Estimated Generation Volume that is estimated to be provided by each generation facility that will provide non-spinning reserve, at each start-up within period “d” (MWh),

$BYTF_{u,d}$ is the Non-spinning Reserve Bid Price regarding generation facility “u” valid for period “d” (TL/MWh),

$DGTF_{u,d}$ is the Start-up Bid Price regarding generation facility “u” to provide non-spinning reserve within period “d” (TL),

(3) Estimated non-spinning reserve unit price regarding each generation facility that is selected to provide non-spinning reserve is calculated by TEIAS according to the formula indicated in the first clause of this Article. Calculated estimated amounts are rated according their prices for the related month. Instructions regarding non-spinning reserves are given in case need for non-spinning reserve is determined by the System Operator in order to provide adequate capacity for the balancing power market. Bids that are rated according to the prices are evaluated in a way as to provide operation safety, system integration and to minimize the costs regarding the provision of ancillary services by taking into account the criteria regarding:

- a) Transmission and/or distribution system constraints,
- b) Technical constraints regarding generation facility,
- c) Active/Deactivate state of the generation facility,
- ç) Supply reliability and quality.

ARTICLE 33 Instructions regarding non-spinning reserve service

[Previous Article 32]

(1) Instructions given to the generation facilities selected for providing non-spinning reserve service indicate output power change that has to be realized within maximum loading duration starting from the start-up of the related generation facility.

(2) Instructions given to provide non-spinning reserve are followed through the activation of the generation facility within start-up duration following the instruction or due time of the instruction and terminated through a notification of the System Operator. Unless otherwise notified, all instructions that are notified as part of the provision of non-spinning reserve regarding a day, terminates at the end of the related day.

(3) Instructions regarding the provision of non-spinning reserve are notified to related generation facility firstly through MMS. Notifications made through MMS shall also be notified via telephone, if required.

(4) Generation facilities that are selected to provide non-spinning reserve service shall realize their generation as indicated in the instruction. Penal sanctions indicated in the

ARTICLE 35 of this Regulation are applied to the generation facilities that do not perform the requirements of the instructions notified to them by the System Operator.

ARTICLE 34 Pricing of non-spinning reserve service

[Previous Article 33]

(1) Non-spinning reserve amount that will be paid to the legal entities engaged in generation activity, for provision of non-spinning reserve amount from generation facilities registered to them shall be calculated according to the following formula:

$$BYT_{p,d} = \sum_{u=1}^k (KBYTM_{p,u,d} \times BYTF_{p,u,d} + DGTF_{p,u,d} \times DGS_{p,u,d} + EABTF_{p,u,d} \times EABS_{p,u,d}) \quad (9)$$

(2) where;

- $BYT_{p,d}$ is the receivable amount that will be realized due to non-spinning reserve service provided in period “d” by the legal entity “p” engaged in generation activity (TL),
- $KBYTM_{p,u,d}$ is the Accepted and Fulfilled Non-spinning Reserve Bid Volume of the generation facility “u” registered to legal entity “p” engaged in generation activity, in the period “d” (MWh),
- $BYTF_{p,u,d}$ is the Non-spinning Reserve Bid Price of the generation facility “u” registered to legal entity “p” engaged in generation activity, regarding the period “d” (TL/MWh),
- $DGTF_{p,u,d}$ is the Start-up Bid Price of the generation facility “u” registered to legal entity “p” engaged in generation activity to provide non-spinning reserve within the period “d” (YTL),
- $DGS_{p,u,d}$ is the Number of Start-ups of the generation facility “u” registered to legal entity “p” engaged in generation activity within period “d” in order to provide non-spinning reserve,
- $EABTF_{p,u,d}$ is the Availability Bid Price of the generation facility “u” registered to legal entity “p” engaged in generation activity within period “d” in order to provide non-spinning reserve (TL/Hour),
- $EABS_{p,u,d}$ is the Availability Duration of the generation facility “u” registered to legal entity “p” engaged in generation activity within period “d” in order to provide non-spinning reserve (hour),
- k is the number of generation facilities that are registered to legal entity “p” engaged in generation activity,

ARTICLE 35 Penal sanctions regarding non-spinning reserves

[Previous Article 34]

(1) No payment regarding non-spinning reserve service is made to the generation license holder legal entity for the related invoicing period, in case a generation facility giving the non-spinning reserve service do not fulfill instructions of the System Operator. No payment regarding non-spinning reserve service is made to the generation license holder legal entity, and a penalty equal to the availability cost that corresponds to the monthly availability duration, in case instructions are not fulfilled more than one time within the same invoicing period.

(2) In addition to the sanctions indicated in the first clause of this Article, TEIAS applies to the Board with a report including details on infringement in case infringements indicated in the first clause of this Article is repeated. The Board imposes sanctions to the related generation facility according to Article 11 of the Law in case violation is confirmed after examining the report.

SECTION 6

Instantaneous Demand Control Service

ARTICLE 36 Principles regarding the provision of instantaneous demand control service

[Previous Article 35]

(1) Consumption facilities in the transmission system which will provide instantaneous demand control service via instantaneous reserves to prevent decrease in the system frequency are determined by means of tenders organized by the System Operator. In consequence of these tenders, ancillary service agreement regarding the instantaneous demand control service is signed between TEIAS and consumption facility owner legal entity for his voluntary consumption facilities which will provide demand control service.

(2) Consumption facility owner legal entities that have electricity consumption over the level indicated in the call for tender can submit bid as indicated in this Regulation for the purpose of providing instantaneous demand control service by means of instantaneous demand control relays.

(3) System Operator shall choose consumption facilities which will provide instantaneous demand control by considering the system constraints, and by minimizing the total instantaneous demand control provision cost.

(4) Payments to the consumption facility owner legal entities regarding instantaneous demand control service are made monthly by TEIAS. No payment is made to the legal entities in the related month, in case consumption facilities they own do not provide the service via instantaneous demand control relays.

(5) TEIAS gets instantaneous demand control service continuously for a time span of maximum 15 minutes. A generation facility that is automatically disconnected from the system to provide instantaneous demand control reserve can reconnect at most within 15 minutes by taking System Operator's approval.

(6) Investments regarding relay, meter and other required equipments that fulfill technical criteria which will be indicated in the tender specifications by TEIAS are made by the related consumption facility owner legal entities.

ARTICLE 37 Process regarding the provision of instantaneous demand control service

[Previous Article 36]

(1)The provision of the instantaneous demand control service is provided on the basis of the provisions in this Regulation and consists of the following steps:

a) TEIAS calls for tender, if find it necessary, by determining the predicted total instantaneous demand control reserve amount that the system may need and maximum bid price, The duration of the ancillary services agreements regarding instantaneous demand control service shall be announced along with the call for tender.

b) Consumption facility owner legal entities submit bids regarding instantaneous demand control service, in accordance with the schedule which will be determined by TEIAS and announced in the call for tender.

c) TEIAS chooses necessary number of bids by evaluating them as indicated in the **ARTICLE 39 Erreur ! Source du renvoi introuvable.**and notifies all bidders.

ç) Ancillary service agreement regarding instantaneous demand control service is signed between TEIAS and consumption facility owner legal entities for the selected consumption facilities.

d) In real time, all demand connected to instantaneous demand control relays within the scope of the agreement is disconnected, in case system frequency decrease to the frequency level determined previously by TEIAS.

ARTICLE 38 Structure and content of the bids regarding the supply of instantaneous demand control

[Previous Article 37]

(1) In accordance with the schedule determined by TEIAS, consumption facility owner legal entities submit their bids to System Operator to provide instantaneous demand control service during the agreement period determined by TEIAS for their consumption facilities qualified as indicated in the second clause of the **ARTICLE 36** of this Regulation.

(2) Bids regarding the provision of instantaneous demand control service are notified to the System Operator by including one bid price regarding the load that will be disconnected via instantaneous demand control relays (TL/MWh) and instantaneous demand control reserve volume (MW). All submitted bid volumes are represented in 1MW term and in its folds.

(3) Bid prices are valid throughout the agreement period. However, bid volumes can be updated by the related consumption facility owner legal entity, only if a valid reason which can be accepted by System Operator exists.

(4) All bid prices are at least equal to zero or greater than zero, they have one per cent sensitivity, and they are in Turkish official currency terms.

ARTICLE 39 Evaluation of the bids regarding instantaneous demand control service

[Previous Article 38]

(1) Submitted bids are rated according to the prices and bids covering the instantaneous demand control reserve amount that is foreseen necessary for the system during the tender period are selected and all bidders are notified.

(2) TEIAS does not discriminate among equal parties on the evaluation of the bids regarding instantaneous demand control service, and takes into consideration the technical specifications and the system conditions.

ARTICLE 40 Ancillary services agreements regarding instantaneous demand control service

[Previous Article 39]

(1) Standard ancillary services agreements that are prepared by TEIAS and approved by the Board are signed between TEIAS and consumption facility owner legal entities regarding instantaneous demand control service provision regarding the provision of instantaneous demand control service.

(2) Agreements regarding instantaneous demand control service that will be signed between consumption facility owner legal entities and TEIAS shall at least include the following information and documents;

- a) Contract period with the condition of not being shorter than a year,
- b) Instantaneous demand control reserve that will be supplied within the scope of the contract (MW),
- c) Accepted bid price that will be valid during the contract period (YTL/MWh),
- ç) A recognizance indicating that the provision of instantaneous demand control service through instantaneous demand control relays during the contract period as per the provisions of this Regulation is guaranteed,
- d) Documents containing instantaneous demand control service performance test results of the consumption facility that is within the scope of the contract,
- e) Technical specifications regarding electricity consumption of the consumption facilities that are within the scope of the agreement.

ARTICLE 41 Instantaneous demand control service pricing

[Previous Article 40]

(1) The amount to be paid on a monthly basis to the consumption facility owner legal entities regarding instantaneous demand control service shall be calculated according to the following formula:

$$TKT_{p,f} = \sum_{t=1}^k \sum_{s=1}^m (TKKYM_{t,f,s} \times TKTF_{t,f} \times (TKHS_{t,f,s} \div 60)) \quad (10)$$

(2) where;

$TKT_{p,f}$ is the receivable amount that will be accrued due to instantaneous demand control service provided by the legal entity “p” in invoicing period “f” (TL),

$TKKYM_{t,f,s}$ is the Decremental Load Amount that is reduced for Instantaneous Demand Control from the consumption facility “t” in invoicing period “f” at hour “s” (MW),

$TKTF_{t,f}$ is the Instantaneous Demand Control Bid Price for consumption facility “t” valid during invoicing period “f” (TL/MWh),

$TKHS_{t,f,s}$ is the Instantaneous Demand Control Service Duration provided by consumption facility “t” by shearing the load at hour “s” of the invoicing period “f” (minute),

k is the number of consumption facilities registered to the legal entity “p”,

m is the number of hours within the period “d”.

ARTICLE 42 Penal sanctions regarding instantaneous demand control service

[Previous Article 41]

²¹(1) In case it was determined for the first time that the demand of a consumption facility connected to the instantaneous demand control relays is not seized related to the concerned legal entity's negligence or fault although system frequency decreases to the frequency level determined previously by TEIAS, the payment regarding the invoicing period when the infringement occurred is not made to the related consumption facility owner legal entity in the related month regarding instantaneous demand control service. In a condition of repetition of the violation within the contract period after invoicing of the same contract period, no payment is not made to the related consumption facility owner legal entity and a penalty is imposed to the related legal entity that is equal to an amount per hour determined considering the bid price and amount concerning the related invoicing period.

(2) Penal sanctions mentioned in the first clause of this Article are not applied for the related hours, in case the System Operator is notified at least from a day before and the reason for the violation is found acceptable and valid by the System Operator.

SECTION 7

Reactive Power Control

ARTICLE 43 Principles regarding the provision of reactive power control service

[Previous Article 42]

²²(1) All licensed generation facilities connected to transmission and distribution system having 30 MW and more installed capacity shall participate in reactive power control between 0.85 power factor of over-excited operation and 0.95 power factor of under-excited operation by means of automatic voltage regulator and/or in accordance with instructions given by the transmission or distribution system operator. Licensed generation facilities connected to transmission system with an installed capacity less than 30 MW will also participate in the reactive power control if deemed necessary by the System Operator. However, wind power based generation facilities shall be workable at each point for the power factor values that are within the limits stated in Electricity Market Grid Code.

(2) In order that generation facilities provide reactive power capacity or in order to function as synchronous compensator, generation facilities shall have an ancillary service agreement regarding reactive power control with the legal entity engaged in generation activity to which they are registered to for generation facilities connected at transmission level, and with distribution license holder legal entity they are connected to for generation facilities connected at distribution level. TEIAS can directly sign ancillary service agreement with generation facility connected to the distribution system regarding reactive power control provided that the permission of the distribution system operator to which generation facility is

²¹ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

²² Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

connected is obtained. Ancillary service agreement regarding the participation of a generation facility to the reactive power control can only be signed with one of the distribution or transmission operators.

(3) Transmission or distribution system operator shall choose generation facilities that will provide the related service among generation facilities within the scope of ancillary services agreements regarding reactive power control by considering system constraints and so as to minimize the total cost of the reactive power control provision.

ARTICLE 44 The process of reactive power control service provision

[Previous Article 43]

(1) The provision of reactive power control for transmission system is met based on the provisions of this Regulation and consists of the following steps:

a) TEIAS determines the reactive power need of the system on the regional basis.

b) Ancillary services agreements regarding reactive power control are signed between TEIAS and legal entities engaged in generation activity registered to the generation facilities that are selected in line with the system requirements.

c) Instructions regarding the provision of reactive power to the system or the withdrawal of reactive power from the system by means of operating generation facilities as generator or synchronous compensator with the aim of regulating the system voltage in real-time, are notified to the related generation facilities by the System Operator. Notifications regarding the termination of the instructions are made to the related generation facility.

ARTICLE 45 Ancillary services agreements regarding reactive power control

[Previous Article 44]

(1) Standard ancillary services agreements shall be signed regarding reactive power control between legal entities engaged in generation activity and TEIAS or distribution license holder legal entities concerning the provision of reactive power control service by way of provision of reactive power capacity by the generation facilities and/or functioning as synchronous compensator, if required by TEIAS or distribution license holder legal entities. Standard ancillary services agreements regarding reactive power control are prepared by TEIAS and approved by the Board. A single ancillary service agreement regarding reactive power control shall be signed with each legal entity engaged in generation activity so as to cover generation facilities selected in accordance with the system requirements to which they are registered.

(2) In order to realize commercial functioning of a new generation facility, an ancillary service agreement regarding reactive power control shall be signed before the completion of provisional acceptance period between TEIAS or distribution license holder legal entity to which generation facility is registered, or concerned generation facility shall be included within the scope of an ancillary service agreement regarding reactive power control that is previously signed by the related legal entity engaged in generation activity.

(3) Ancillary services agreements regarding reactive power control that will be signed between legal entities engaged in generation activity and TEIAS or distribution license holder legal entities shall at least include the following information and documents;

a) Period covered by the contract,

b) A recognizance indicating that the provision of reactive power control service in the course of the contract period is guaranteed, in case transmission and distribution system operator gives instruction,

c) Documents that include the results of the reactive power tests as part of Electricity Market Grid Code or Electricity Market Distribution Regulation for each generation facility that is covered by the agreement,

ç) Information indicating which of the generation facilities registered to the related legal entity is to be encompassed by the agreement, and technical specifications of the mentioned generation facilities,

d) Monthly synchronous compensation service cost determined in consequence of the negotiations as part of the agreement to meet requirements of the agreements between TEIAS and reflecting the investment, operation and maintenance costs and the costs of Consumption (Purchase) System Usage and Operation Price paid monthly to TEIAS by the legal entity .²³

ARTICLE 46 Instructions given by the System Operator regarding reactive power control

[Previous Article 45]

(1) Instructions regarding reactive power control are firstly notified via MMS, if required by generation facilities that are chosen by the System Operator as part of transmission system operation to provide reactive power control as generator or synchronous compensator or that will give automatic reactive power control service via automatic voltage regulator. Notifications made through MMS shall also be notified via telephone, if required.

(2) Generation facilities that are selected by the System Operator to provide reactive power control service or that will give automatic reactive power control service shall provide service in accordance with the Electricity Market Grid Code. In order to eliminate violations, System Operator gives written warning to the related generation facilities that do not perform instructions as it is notified by the System Operator without any acceptable and valid reason. If the related generation facility insists on violation TEIAS applies to the Board with a report that includes the details of the violation.

²⁴(3) The Board imposes sanctions to the related legal entity engaged in generation activity according to the Article 11 of the Law in case violation is confirmed after examining the report.

ARTICLE 47 Reactive power control service pricing

[Previous Article 46]

(1) Wind power based generation facilities that have ancillary service agreement with TEIAS regarding reactive power control shall not get paid in return for participating reactive power control indicated within the frame of Electricity Market Grid Regulation and other generation facilities shall not get paid in return for participating reactive power control

²³ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

²⁴ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

between 0.85 power factor of over-excited operation and 0.95 power factor of under-excited operation.

(2) The cost for the decrease in active power output of the generation facilities that has ancillary service agreement with TEIAS regarding reactive power control during the provision of reactive power capacity except the capacity providing nominal output between 0.85 power factor of over-excited operation and 0.95 power factor of under-excited operation, shall be calculated within the frame of the provisions of **ARTICLE 48**.

(3) The cost regarding the active electricity energy withdrawn from the system during the operation of the generation facilities that has ancillary service agreement with TEIAS regarding reactive power control as the synchronous compensator, and the costs regarding investment, operation and maintenance and the price to be paid in order to cover the costs of System Usage and Operation Fee shall be calculated within the frame of the provisions of the **ARTICLE 49**.²⁵

ARTICLE 48 Pricing of the changes in the active output power

[Previous Article 47]

(1) Required output power changes of the generation facilities that has ancillary service agreement with TEIAS regarding reactive power control are provided through the related generation facilities' bids that have been supplied as part of balancing power market when there is a necessity to reduce active power output in order to operate out of the capacity enabling the over-excited power factor of 0.85 and under-excited power of 0.95 and/or to operate as synchronous compensator. Tag value of the instructions given within this context is determined as 2 (two). The cost that grows regarding instructions having the tag value of 2, given in this context, is calculated pursuant to **ARTICLE 26** of this Regulation and is paid via system operation cost.

ARTICLE 49 Pricing of the service of operating as synchronous compensator

[Previous Article 48]

(1) The synchronous compensation cost that will be paid to the legal entities engaged in generation activity for reactive power control service that is provided through the operation of the generation facilities that are registered to these legal entities as synchronous compensator and having ancillary services agreement with TEIAS shall be calculated according to the following formula:

$$SKT_{p,d} = \sum_{u=1}^k \left(\sum_{s=1}^m (SDF_{d,s} \times AEEÇM_{p,u,d,s}) + SKHB_{p,u,d} \right) \quad (11)$$

(2) where;

$SKT_{p,d}$ is the receivable amount that will be accrued due to operation of the generation facilities as synchronous compensator in period "d" that are registered under to legal entity "p" engaged in generation activity (TL),

$SDF_{d,s}$ is the System Imbalance Price of the period "d" valid for hour "s" (TL/MWh),

²⁵ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

- $AEE\zeta M_{p,u,d,s}$ is the Active Energy Withdrawal Volume of the generation facility “u” registered to legal entity “p” engaged in generation activity, for hour “s” of the period “d” (MWh),
- $SKH_{Bp,u,d}$ is the Synchronous Compensation Service Cost of the generation facility “u” registered to legal entity “p” engaged in generation activity, valid through the period “d” (TL),
- k is the number of generation facilities that are registered to legal entity “p” engaged in generation activity,
- m is the number of hours within the period “d”.

d) Monthly synchronous compensation service cost determined reflecting the investment, operation and maintenance costs and the costs of Consumption (Purchase) System Usage and Operation Cost shall be calculated according to the following formula:²⁶

$$SKHB_{p,u,d} = \left(\sum_{s=1}^m (SDF_{d,s} \times AEE\zeta M_{p,u,d,s}) \right) \times h + TSKB_{p,u,d}$$

(4) where;

- $SKHB_{p,u,d}$ is the Synchronous Compensation Service Cost of the generation facility “u” registered to legal entity “p” engaged in generation activity, valid through the period “d” (TL),
- $SDF_{d,s}$ is the System Imbalance Price of the period “d” valid for hour “s” (TL/MWh),
- $AEE\zeta M_{p,u,d,s}$ is the Active Energy Withdrawal Volume of the generation facility “u” registered to legal entity “p” engaged in generation activity, for hour “s” of the period “d” (MWh),
- h The coefficient on which the parties agree in order to procure uniformity within the implementation and not to seek discrimination between the equal parties,
- $TSKB_{p,u,d}$ is the Consumption (Purchase) System Usage and Operation Cost to be payable in case the S generation facility “u” registered to legal entity “p” engaged in generation activity provides the Synchronous Compensation Service Cost on period "d", resulting from the active electricity withdrawn from the system on period "d" and paid by the legal entity engaged in generation activity to TEIAS (TL),
- m is the number of hours within the period “d”.²⁷

SECTION 8

Black Start Capability

²⁶ Added with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

²⁷ Added with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

ARTICLE 50 Principles regarding the provision of black start capability service

[Previous Article 49]

(1) Generation facility owner legal entities engaged in generation activity that can be activated without needing an external power source or can be qualified with this characteristic with the investment they will make within the period granted by TEIAS, shall sign ancillary service agreement regarding black start capability service as indicated in this Regulation, if required by TEIAS.

(2) The System Operator shall choose generation facilities to sign agreements for the provision of black start capability service as a result of the negotiations by considering system constraints and in a way as to minimize the total cost regarding black start capability.

(3) Legal entities engaged in generation activity ensure that generation facilities selected to give black start capability service in accordance with the standards indicated in the Electricity Market Grid Code give the service within the frame of system restoration schedule.

ARTICLE 51 Ancillary service agreement signature process regarding black start capability

[Previous Article 50]

(1) When required, ancillary service agreement signature process between TEIAS and the related legal entity regarding black start capability service for the generation facilities that are chosen by the System Operator to provide black start capability service is carried out on the basis of the provisions of this Regulation and consists of the following steps:

a) When required, TEIAS negotiates to sign ancillary services agreements regarding black start capability by determining the need for generation facilities with black start capability on the basis of regions so that the system restoration schedule can be prepared or updated.

b) As a result of negotiations, an ancillary service agreement regarding black start capability is signed between TEIAS and legal entities engaged in generation activity that generation facilities are registered to.

ARTICLE 52 Negotiations regarding black start capability

[Previous Article 51]

(1) Generation facility owner licensed legal entities qualified as indicated in the **ARTICLE 50** of this Regulation participate in negotiations on the request of TEIAS to provide black start capability service during the contract period determined by TEIAS by means of their generation facilities that have black start capability or that will have such capability through investments they made.

(2) TEIAS shall call licensed legal entity for negotiation to sign ancillary service agreement regarding the first black start capability process of a generation facility that owns emergency diesel generator that meet started-up ability without needing a newly established and external energy source.

(3) Negotiations are carried out upon the monthly wage (TL) reflecting investment, operating and maintenance costs regarding emergency diesel generator providing black start capability without needing an external energy power for the agreement that will be made for

the first time, and operating and maintenance costs for the agreement that will be made afterwards. Negotiations start upon the first invitation of TEIAS with the pricing study made by the related licensed legal entity regarding monthly wage and its submission to TEIAS in details.

(4) Fuel cost regarding emergency diesel generator is fully paid in case the black start capability service is met by the related generation facility by means of implementation of the system restoration schedule.

ARTICLE 53 Ancillary services agreements regarding black start capability

[Previous Article 52]

(1) Standard ancillary services agreements that are prepared by TEIAS and approved by the Board regarding black start capability service are signed between the legal entities engaged in generation activity and TEIAS. A single ancillary service agreement regarding reactive power control shall be signed with each legal entity engaged in generation activity so as to cover generation facilities selected in accordance with the system requirements to which they are registered.

(2) Agreements regarding black start capability that will be signed between legal entities engaged in generation activity and TEIAS should at least include the following information and documents;

- a) The period covered by the contract on the condition not being shorter than 5 years,
- b) A recognizance indicating the guarantee of the black start capability service provision throughout the contract period, when required,
- c) Documents that include the results of black start capability tests within the scope of the Electricity Market Grid Code for each of generation facility within the scope of the contract,
- ç) Information indicating which of the generation facilities registered to the related legal entity is to be encompassed by the agreement, and technical specifications of the mentioned generation facilities,
- d) Black start capability service cost for each of generation facility within the scope of the contract that is determined through the negotiations between the legal entities engaged in generation activity and TEIAS.

(3) Generation facilities that are chosen to provide black start capability service shall provide the service in accordance with the restoration schedule and the provisions of the Electricity Market Grid Code, when required.

ARTICLE 54 Black start capability service pricing

[Previous Article 53]

(1)The cost that will be paid to the legal entities engaged in generation activity for the generation facilities registered to them regarding black start capability service shall be calculated according to the following formula:

$$OSTT_{p,d} = \sum_{u=1}^k (KYM_{p,u,d} \times BYBF_{p,u,d} + OSTHB_{p,u,d}) \quad (13)$$

(2) where;

$OSTT_{p,d}$ is the receivable amount that will be realized due to black start capability service provided by the legal entity “p” engaged in generation activity within period “d” (TL),

KYM _{p,u,d}	is the Utilized Fuel Amount by the generation facility “u” registered to legal entity “p” engaged in generation activity, used during black start capability service within period “d”,
BYBF _{p,u,d}	is the Notified Fuel Unit Cost regarding generation facility “u” during black start capability service registered to the name of legal entity “p” engaged in generation activity within period “d”,
OSTHB _{p,u,d}	is the Black Start Capability Service Cost regarding legal entity “p” engaged in generation activity generation for generation facility “u” registered to the name of the legal entity valid through period “d” (YTL),
k	is the number of generation facilities that are registered to legal entity “p” engaged in generation activity,

ARTICLE 55 Penal sanctions regarding black start capability service

[Previous Article 54]

(1) On the condition that a generation license holder legal entity does not keep available its generation facility that the legal entity has signed agreement to provide black start capability service or if the legal entity cannot provide black start capability service although it received instruction from the System Operator, a fine equals to twofold of the total payments made to this legal entity throughout the contract period is imposed to the related legal entity holding a generation license.

(2) Besides, TEIAS applies to Authority with a report that includes the details of the violation, if the related generation facility insists on violation. The Board imposes sanctions to the related generation facility according to Article 11 of the Law in case violation is confirmed after examining the report.

SECTION 9

²⁸Principles and Procedures Concerning the Supplication of the Regional Capacity Renting Service

ARTICLE 54/A Regional capacity renting procedures

[Previous Article 54/A]

(1) In accordance with the first clause of Added 3rd Article of Law, TEIAS is entitled to hold a tender to rent regional capacity within the principles and procedures governed by this Regulations in order to preserve the system safety and to fulfill the regional system needs that might arise due to the inadequate capacity.

(2) The regional capacity renting will be carried out via the tenders to be arranged after the approval by the Board within Article 54/B by TEIAS if deemed necessary.

The legal entities that are able to supply regional capacity renting services with the investments they will do within the period to be given by TEIAS will be eligible to participate in the tenders to be arranged by TEIAS in order to rent regional capacity by means of giving sealed bids.

(4) All the duties concerning obtaining the license of the generation facility offered within the tender under related legislation, its installation and starting the commercial operation on the date undertaken will be executed within the responsibility of the legal entities elected in the tender.

(5) Legal entities bid on the annual capacity cost and unit energy cost. The election among the facilities fulfilling technical competence is made considering the unit capacity renting cost per MW calculated within the formula stated in Article 54/Ç.

(6) A generation facility within the scope of ancillary service agreement concerning the regional capacity renting shall bid on the organized wholesale electricity markets apart from maintenance period in accordance with the agreement provisions and shall carry out the generation within the scope of the sales within these markets and the instructions it has received.

(7) The capacity cost bid on the tender starts to be paid monthly to the legal entities with which the agreement is made after the generation facility commences its commercial operations. The capacity costs to be paid are born via the system operation costs by TEIAS.

(8) The legal entities with which the agreement is made bids for the sale of its energy via organized wholesale electricity markets when the generation facility commences its commercial operations. The energy price offered under the regional capacity renting constitutes maximum price within the organized wholesale electricity market for the generation facility during the agreement. The cost of the energy sold via organized wholesale electricity markets is borne over the bid cost in accordance with the Electricity Market Balancing and Settlement Regulation and the provisions of this Regulation.

ARTICLE 54/B Determining the regional capacity need

[Previous Article 54/B]

(1) The regional capacity need is determined by TEIAS in accordance with the generation safety criteria prepared by TEIAS within the scope of Electricity Market Grid Code and including the possibility of failure to fulfill the peak load for a year. The process of determining the regional capacity need is carried out by TEIAS via following the steps below:

a) TEIAS determines the transmission system regions where extensive transmission constraints are expected in the transmission connection points forming its boundaries or considers the determined bid regions if more than one bid regions are determined in accordance with Electricity Market Balancing and Settlement Regulation.

b) TEIAS calculates the possibility of the failure to meet the peak load in regional basis for the following 2 days via considering at least the following conditions:

- 1) Demand forecasts and forecast error possibility breakdown,
- 2) The availability of the current generation facilities,
- 3) Maintenance needs,
- 4) The progress of the generation facilities being built,
- 5) The generation of the hydraulic and other renewable generation facilities,
- 6) The availability of the inter-regional transmission capacities.

The possibility of the failure to meet the peak load in regional basis calculated by TEIAS is compared with the possibility of the failure to meet the peak load included in the Electricity Market Grid Code. Regional capacity needs test is carried out for the regions

where the possibility of the failure to meet the peak load calculated by TEIAS exceeds the target value stated in the Electricity Market Grid Code.

ç) The amount of regional capacity need is determined considering the capacity amount that will bring the possibility of the failure to meet the peak load for the related region to the target value stated in the Electricity Market Grid Code.

(2) In the event that TEIAS determines the regional capacity need for at least one region or more regions, TEIAS carries out operations concerning whether the capacity need will be resolved with non-spinning reserves or transmission system investments. The process concerning the non-spinning reserves dealt with in this Regulation is applied in order to rent the capacities of the generation facilities that are entitled to be evaluated as a non-spinning reserve. In this sense, non-spinning reserve tender can be arranged in order to rent the capacities of the generation facilities that will supply non-spinning reserve, up to two years.

(3) In the event that the non-spinning reserves do not meet the needs either, TEIAS applies to the Board in order to get approval to arrange regional capacity renting tender under Article 54/A. The opinions concerning possibility of the failure to meet the peak load calculated for related regions, volume determination, the details of the works carried out concerning the agreement period or whether the capacity need will be resolved with non-spinning reserves or transmission system investments. The tender process concerning regional capacity renting is commenced following the approval by the Board.

ARTICLE 54/C Regional capacity renting tender process

[Previous Article 54/C]

(1) The tender concerning the regional capacity renting is concluded in two steps by TEIAS, being preliminary competence and tender. The legal entities wanting to add units to their existing generation facilities or to make new generation facility investment can apply to the tender.

(2) Preliminary competence and tender process commences with the publication of the tender announcement on the official website by TEIAS. The tender announcement includes information concerning the regions where the tender is applicable, the amount of capacity needed in regional basis, estimated annual generation period in technological basis, the deadline for the generation facility to commence the commercial operation, agreement duration, the annual capacity cost to be offered and how the energy cost will be updated.

(3) Preliminary competence is carried out in order to determine the offered facilities' competency to respond to the need. Preliminary competence offers are evaluated by TEIAS in accordance with the Electricity Market Grid Code and the preliminary competence specification provisions to be prepared. As a result of the technical evaluation carried out under preliminary competence, TEIAS is informed concerning the investors interested in the tender, anticipated capacity sources and the date when the generation facility will commence the commercial operation.

(4) The candidates deemed sufficient after the preliminary competence evaluation are invited to the tender in writing. The bids submitted to the tender are evaluated by TEIAS in accordance with the Electricity Market Grid Code and the preliminary competence specification provisions to be prepared. A maximum bid limit can be applied if deemed necessary by TEIAS.

(5) The ancillary service agreement concerning the regional capacity renting to be valid from date when the generation facility commences the commercial operation is signed between the legal entities engaged in generation activity after the Board grants the license.

ARTICLE 54/D Election of the generation facilities that can provide regional capacity renting service

[Previous Article 54/D]

(1) The regional capacity renting unit price that will constitute basis for the election of the generation facilities that can provide regional capacity renting service is calculated according to the following formula:

$$BKKBF_{u,t} = \left(\frac{EF_u \times BKKTK_u \times TYÜS_{u,t} + YKTF_u}{BKKTK_u} \right) \quad (14)$$

(2) where;

$BKKBF_{u,t}$ is the Regional Capacity Renting Unit Price calculated for the generation facility "u" having the technology "t" (TL/MW),

EF_u Unit Energy Price offered by the generation facility "u" (TL/MWh),

$BKKTK_u$ Offered Capacity within the scope of Regional Capacity Renting by the generation facility "u" (MW),

$TYÜS_{u,t}$ Estimated Annual Generation Period (hour) for the generation facility "u" having the technology "t" specified by TEIAS,

$YKTF_u$ Annual Capacity Bid Price offered by the generation facility "u" (TL)

(3) Regional capacity renting unit price for each generation facility having a valid bid for supplying regional capacity renting service is calculated by TEIAS according to the formula indicated in the first clause of this Article. The number of bids to the extent that they will provide the amount stated in the tender specifications will be selected by ordering the prices calculated.

ARTICLE 54/E Ancillary services agreements regarding regional capacity renting

[Previous Article 54/E]

(1) Standard ancillary services agreements that are prepared by TEIAS and approved by the Board regarding the regional capacity renting service are signed between the legal entities elected in accordance with Article 54/Ç of this regulation and TEIAS. Separate ancillary service agreements regarding regional capacity renting shall be signed with each generation facility selected after the tenders and each legal entity engaged in generation activity.

(2) Agreements regarding regional capacity renting that will be signed between legal entities engaged in generation activity and TEIAS should at least include the following information and documents;

a) The duration covered by the agreement for adding new units to the existing generation facilities, being maximum 2 years for the mobile centrals and 8 years the new generation facilities to be built from scratch,

b) A recognizance indicating the guarantee of the service provision throughout the contract period, when required,

c) Technical features of the generation facility within the scope of the agreement,

ç) The energy price determined after the tender and annual capacity bid price for the generation facility within the scope of the agreement.

(3) The generation facilities within the scope of the ancillary services regarding regional capacity renting shall provide services in accordance with the provisions of the Electricity Market Grid Code, Electricity Market Balancing and Settlement Regulation and the ancillary service agreement regarding regional capacity renting.

(4) Legal entity engaged in generation activity fulfills the participation of the generation facility to other ancillary services and other liabilities regarding the system conformity in accordance with the provisions of the related legislation.

ARTICLE 54/F Regional capacity renting pricing

[Previous Article 54/F]

(1) The monthly cost that will be paid to the legal entities engaged in generation activity for the generation facilities registered to them regarding regional capacity renting service shall be calculated according to the following formula:

$$BKKT_{p,f} = \sum_{u=1}^n \left((YKTF_{p,u} \div 12) \times \frac{EBSS_{p,u,f}}{TSS_f} \right) \quad (15)$$

(2) where;

$BKKT_{p,f}$ is the amount of receivable which will be accrued due to regional capacity renting service provided in the invoicing period "f" regarding the legal entity "p" engaged in generation activity (TL),

$YKTF_{p,u}$ is the Annual Capacity Big Price offered by Legal entity engaged in generation activity "p" for generation facility "u" (TL),

$EBSS_{p,u,f}$ is the number of hours that the generation facility "u" registered in the name of legal entity engaged in generation activity has been available during invoicing period "f",

TSS_f is the number of hours within the invoicing period "f",

n is the number of generation facilities under the ancillary service agreement concerning the regional capacity renting, which are registered to legal entity "p" engaged in generation activity,

(3) The payment of the monthly capacity price calculated in accordance with the formula stated in the first clause of this article commences after the generation facility starts the commercial operations.

(4) The durations during which the generation facilities within the scope of ancillary services agreement regarding the regional capacity renting are not available due to maintenance and incidental conditions are notified to TEIAS in writing by related license owner legal entity until the end of the working hours at latest on the following fourth day.

ARTICLE 54/G Penal sanctions regarding regional capacity renting service

[Previous Article 54/G]

(1) A generation facility within the scope of ancillary service agreement concerning the regional capacity renting shall not be paid within the scope of the ancillary service agreement regarding the license owner legal entity if they do not submit bids to the organized wholesale electricity markets except for the maintenance period and malfunction states conforming to the agreement provisions.

The license owner legal entity shall not be paid and shall be imposed penalty 1/12 of the annual capacity offer price for the related invoicing period if a generation facility within the scope of ancillary service agreement concerning the regional capacity renting is given instruction except for the maintenance period and malfunction states and this facility does not fulfill it.

Notifications, Invoicing and Payments

ARTICLE 56 Notification within the scope of ancillary services provision

[Previous Article 55]

(1) Instructions regarding the provision of ancillary services are notified to the related legal entities engaged in generation activity firstly by means of MMS. Notified instructions through MMS may also be confirmed via telephone, if required.

(2) Legal entities engaged in generation activity are responsible for taking required measures to gain access to MMS. However, when MMS is not functioning, notifications are made via fax and telephone. Notifications, which are made via fax and telephone, are transferred to MMS by the System Operator.

(3) MMS records are taken as the basis for the instruction notifications through MMS. If the related instruction notification was also made via other communication channels, the records belonging to these communication channels are also referred. If there is disagreement between the System Operator and the related legal entity engaged in generation activity, sound records of the recorder in the Load Dispatch Centre from which the instruction is received are valid.

ARTICLE 57 I) Payment Notifications:²⁹

[Previous Article 56]

(1) Payment notifications regarding the payments that have to be made in return of the services of the legal entities that are providing ancillary services, code 2 up-regulation and down-regulation amounts given to form a reserve within the scope of ancillary services and the fines that are resulting from their unfulfilled responsibilities are prepared by TEIAS and announced to the related legal entities through MMS.

(2) The following information is provided regarding the related legal entities and/or facilities by the RLDC or the System Operator;

a) Amount and start and termination times of the instructions given by legal entities/facilities to provide ancillary service,

b) Actual duration of the ancillary services determined to be provided by the legal entities/facilities, start-up number that are determined as a result of the monitoring process, and provided ancillary services amount that is determined on the basis of monitoring principals.

(3) Following information is provided through MMS by the System Operator regarding related legal entities and/or facilities to prepare payment notifications;

a) Hourly System Marginal Prices,

b) System Imbalance Prices,

c) Bid and offer prices that are provided within the scope of balancing power market,

ç) Settlement aggregation entities,

d) Up-regulation, down-regulation instructions within the scope of balancing power market.

²⁸ Continued with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

²⁹ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

(4) Following information is provided by TEIAS through ancillary services agreements or the related Board Decision regarding the related legal entities and/or facilities to prepare payment notifications;

- a) Unit service cost,
- b) Ancillary service offer/bid price and amount.

(5) Information regarding the fuel amount used for the black start capability service and the fuel price are provided by the legal entity that provides ancillary service.

(6) Information mentioned in the second, third, fourth, and fifth clauses is notified in accordance with the format determined by TEIAS at the latest on the fourth day of each month until the end of working hours.

(7) TEIAS issues the payment notifications concerning the penalties implemented due to the payables incurred as a result of the services provided to the legal entities providing ancillary services and the penalties implemented due to the liabilities that they have not fulfilled on the basis of legal entities that provide ancillary services through MMS until the end of the working hours in the seventh day of the related month. Payment and penalty amounts in the payment notifications regarding whole ancillary services provided during the related month by the related legal entity are indicated separately. Payment notifications concerning the secondary frequency control services also include the difference amounts arising during the calculation of the final settlement notifications of the previous month.

(8) Related legal entities make their objections regarding the payment notifications within two days following the issuance of the payment notifications to TEIAS. TEIAS finalizes these objections until the end of the working hours within the twelfth day of the related month and notifies the related payment notifications to the related legal entities through MMS.

(9) The payment notifications regarding code 2 up-regulation and down-regulation amounts given in order to form reserves within the scope of ancillary services are published by TEIAS along with the publication of the final settlement notifications forming the basis of the invoice in accordance with Electricity Market Balancing and Settlement Regulation under the provisions of Electricity Market Balancing and Settlement Regulation concerning the settlement.

ARTICLE 56/A Invoicing³⁰

[Previous Article 56/A]

(1) Legal entities that provide ancillary services deliver their invoices to TEIAS regarding the services provided to TEIAS in a way to provide consistency with the previously issued payment notifications, on MMS in seven days before the fifteenth day of the related month.

(2) Related market participants arrange and deliver the invoices concerning code 2 up-regulation instructions in a way that they will be consisted with the payment notifications published in MMS in seven days after the fifteenth day of related month to TEIAS.

(3) TEIAS arranges and delivers the invoices regarding code 2 up-regulation instructions in a way to provide consistency with the previously issued payment notifications, on MMS in seven days after the fifteenth day of related month to related market participants.

(4) TEIAS delivers the invoices regarding the penalties imposed due to the liabilities that are not fulfilled by the legal entities in a way to provide consistency with the previously issued payment notifications, on MMS in seven days before the fifteenth day of the related month.

³⁰ Added with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

ARTICLE 56/B Payment, collection and objections

[Previous Article 56/B]

³¹ Invoice amounts that are drawn up consistent with the updated payment notifications issued on MMS and delivered to TEIAS within the period that stated in **ARTICLE 57** by the legal entities that provide ancillary services and market participants receiving instructions for code 2 up-regulation, will be paid by TEIAS within fifteen working days of the month following the date when the invoice is delivered.

Invoice amounts that are drawn up consistent with the updated payment notifications issued on MMS by TEIAS will be paid within fifteen working days of the month following the date when the invoice is delivered by the market participants and/or the related legal entities that provide ancillary services.

(3) TEIAS returns invoices that are not drawn up consistent with the updated payment notifications issued on MMS, within eight working days starting from the day that the invoice received. No payment regarding the returned invoice is made. The cost of the re-arranged invoice is paid by TEIAS in fifteen business days following the issuance date of the re-arranged invoice.

(4) The legal entities providing ancillary services and market participants can submit written objections to TEIAS regarding the invoices in seven days after the issuance date of the invoice. The objection by the legal entities providing ancillary services and market participants to the invoices does not relieve them of their payment liabilities. TEIAS investigates the righteousness of the objection by means of examining the record information and settlement calculations based on the objection. Monetary errors are immediately concluded and the objection applications apart from these monetary errors are concluded in 20 business days by TEIAS. If the objection is justified and/or TEIAS determines an error without an objection, required correction is made. The disputes concerning the conclusion of TEIAS are examined by the Board upon the legal entities providing ancillary services and market participants.

(5) If related parties do not pay the invoice amounts within the period specified in this Article, default interest will apply to the payment amounts payable due on time. This rate is the default interest rate determined in accordance with Article 51 of the Law Regarding the Collection Principle of the Public Receivables no. 6183 dated 21/07/1953.

(6) If the legal entities providing ancillary services and market participants do not pay such invoice amount within 15 days following the issuance date of the invoice, such party is deemed to be in default. The payments that the party in default is required to make are primarily set off from the receivables of such legal entity from TEIAS, provided that the legal procedures are reserved.

ARTICLE 58 Adjustment transactions

[Previous Article 57]

(1) Objections regarding the mistakes regarding ancillary services provided in the previous month that cannot be determined within the period mentioned in the **ARTICLE 57** are made in written to the related party. Required adjustments are made by TEIAS on the condition that objections regarding payment notifications that are made by the legal entities providing ancillary services are recognized as a result of the evaluations. Following the finalization of objection, a written notification is made to the legal entity engaged in

³¹ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

generation activity by TEIAS. The payment that is required to be made by the legal entity/entities or to legal entity/entities as a result of the adjustment, takes place as retroactive adjustment item in the payment notification regarding the first invoicing period following the date on which written notification regarding the adjustment is made.

(2) The corrections regarding the objections made by TEIAS to the market participants regarding the invoices are carried out by such market participant. The invoice issued by such market participant is returned upon the invoice objection applications by TEIAS. The invoice corrected by such market participant is sent again to TEIAS.³²

ARTICLE 59 ³³**Invoicing and payments regarding penalties**
[Previous Article 58]

SECTION 11 ³³

Miscellaneous and Final Provisions

ARTICLE 60 ³³**Misuse of the dominant power and conforming action**
[Previous Article 59]

(1) The attempts by the Competition Board regarding the investigation against the legal entities doubted to have misused their dominant power regarding any ancillary services handled within the scope of this Regulations or to have been in conforming action are commenced with TEIAS drawing up a report regarding the misuse of the dominant power or directly by the Board.

(2) The sanctions for the legal entities determined to have misused their dominant power by the Competition Board is commenced by the Board.

ARTICLE 61 ³⁴**Transfer and assignment**
[Previous Article 60]

(1) Assignments and transfers made related to the obligations within the scope of this regulation, except the ones defined regarding the transfer of obligation, regarding the primary frequency control service are not executed for TEIAS. Rights within the scope of this Regulation can only be assigned and transferred through the approval of TEIAS.

ARTICLE 62 ³⁴**Recourse**
[Previous Article 61]

³² Added with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

³³ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

ARTICLE 63 Confidentiality

[Previous Article 62]

(1) TEIAS is obliged to take necessary precautions regarding confidentiality of the information and documents provided by the related legal entities within the frame of this Regulation.

PROVISIONAL ARTICLE 1 Primary frequency control participation rate

[Previous Provisional Article 1]

(1) Primary frequency control participation rate valid on the date when this Regulation become effective is 2,00%.

³⁴(2)

(3) The primary frequency control participation rate which each legal entity engaged in generation activity is liable to supply can be re-determined by TEIAS by arranging and additional protocol to the primary frequency control service agreement for the legal entity engaged in generation activity deemed necessary and this amended being valid until 31/21/2012 in order to the procure the sufficient secondary frequency control reserve amount in line with the integration objectives of Turkish electricity system with ENTSO-e system. The protocol to be made between the legal entities engaged in generation activity and TEIAS becomes effective with the Board approval.³⁵

PROVISIONAL ARTICLE 2 Applications

[Previous provisional Article 2]

(1) Legal entities that are engaged in generation activity and obliged to participate in primary frequency control in accordance with clauses of this Regulation are obliged to sign related ancillary service agreement and/or to start required procedures to begin the provision of the service in accordance with the schedule notified by TEIAS, not exceeding 6 months, by applying to TEIAS within 2 weeks following the publication of this Regulation.

(2) Licensed legal entities that own generation facility qualified as indicated in the Article 17 of this Regulation are obliged to sign related ancillary service agreement and/or to start required procedures to begin the provision of the service in accordance with the schedule notified by TEIAS by applying to TEIAS within 1 month following the publication of this Regulation.

(3) Licensed legal entities that own generation facility connected to transmission system are obliged to sign ancillary service agreement on reactive power control and/or to start required procedures to begin the provision of the service in accordance with the schedule notified by TEIAS by applying to TEIAS within 3 months following the publication of this Regulation.

(4) Authority is informed by TEIAS on legal entities that are not applied to TEIAS within the time prescribed in the first, second and third clauses of this Article and/or legal entities that signed ancillary services agreements regarding within the scope of the schedule

³⁴ Removed with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

³⁵ Added with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

notified by TEIAS. Authority imposes sanctions to the related legal entities engaged in generation activity as per the Article 11 of this Regulation.

PROVISIONAL ARTICLE 3 Monitoring and Controlling

[Previous provisional Article 3]

³⁶(1) Required monitoring and control system is established by TEIAS until 31/12/2012. Until the establishment of the mentioned monitoring and control system, the monitoring and controlling of ancillary service provider facilities is made by the related NLDC and/or the System Operator, maximum on a monthly basis, with the help of the records of the related facilities, notification made by the legal entities to the System Operator regarding availability of the facilities belongs to legal entities, and TEIAS's existing SCADA system.³⁷

(2) Primary frequency control participation duration is determined by the related NLDC considering times indicated in the primary frequency control reserve amount notifications made by generation license holder legal entities via MMS, and notifications of the System Operator and/or NLDCs regarding availability of the generation facilities.

PROVISIONAL ARTICLE 4 Ancillary services responsibilities regarding TETAS

[Previous provisional Article 4]

³⁸(1) Generation facilities that sell electricity energy to TETAS as part of Build Operate, Build Operate Transfer and Transfer of Operating Rights models and current contracts, take place within the scope of ancillary services agreements that will be made with TETAS.

(2) Rights and obligations regarding the fulfillment of the assignments and transactions regulated in this Regulation related to the participation of the generation facilities taking place within this scope to the ancillary services, are belongs to TETAS.

(3) Debts and credits of the mentioned generation facilities resulting from the provision of ancillary services are accrued to TETAS.

(4) Generation facilities that sell electricity energy to TETAS as part of Build Operate, Build Operate Transfer and Transfer of Operating Rights models and current contracts, take place within the scope of ancillary services agreements that have been signed.

(5) The primary frequency control participation rate valid for TETAS is the rate which all parties are subject to according to this Regulation.

(6) Due to the generation facilities that sell electricity energy to TETAS as part of Build Operate, Build Operate Transfer and Transfer of Operating Rights models and current contracts, the power factor limits that TETAS is liable to provide in accordance with the first clause of **ARTICLE 43** are the values included in the Energy Sale Agreements that have been signed.

³⁶ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

³⁷ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

³⁸ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

PROVISIONAL ARTICLE 5 Secondary frequency control participation obligation

[Previous provisional Article 5]

(1) Generation facilities which does not equipped that receives and processes the signals sent from the automatic generation control system are not obliged to be qualified so as to provide secondary frequency control service or to participate in secondary frequency control.

PROVISIONAL ARTICLE 6 Ancillary services performance tests

[Previous provisional Article 6]

(1) Tests that performed in accordance with Electricity Market Grid Code are also approved until when the firms that will make required ancillary services tests, are accredited.

³⁹(2) Those which are suggested by the legal entity engaged in generation activity in order to provide the primary frequency control service and deemed appropriate by TEIAS among those whose required ancillary services performance tests regarding the primary frequency control service are not completed and whose operation duration exceeds 20 years by 1/1/2009 can notify such generation facilities for primary frequency control reserve amount via MMS on the condition that they successfully complete the required primary frequency control performance tests until 1/1/2011 and subject to the provisions within this Regulation.⁴⁰ Those among such generation facilities which fail to complete the required performance tests until 1/1/2011 shall not be eligible for primary frequency control reserve amount notifications via MMS.⁴¹

(3) The ancillary services tests carried out until 31/12/2012 by the companies which have applied to TURKAK to be accredited, have undertaken to TEIAS in writing that they will complete their accreditation transactions until 31/12/2012 and have presented their written document to TEIAS regarding the fact that the application is recorded by TURKAK will be accepted on the condition that they will be evaluated and approved by the Ancillary Services Performance Test Evaluation Commission founded by TEIAS. Such companies submit their quarterly progress reports given by TURKAK regarding the accreditation process to TEIAS. In case this report is negative, the authority of these companies is suspended until the next report period. In the event that the accreditation process of these companies is not completed until 31/12/2012, the tests carried out after the end of this period is not evaluated by Ancillary Services Performance Test Evaluation Commission. The companies awarded with the authority to do tests or those whose authority is suspended are announced to the market participants on TEIAS website.⁴²

PROVISIONAL ARTICLE 7 The context of the black start capability service cost

[Previous provisional Article 7]

³⁹ Added with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

⁴⁰ Amended with the Regulation published in the Official Gazette no. 27730 dated 15/09/2010.

⁴¹ Amended with the Regulation published in the Official Gazette no. 27730 dated 15/09/2010.

⁴² Added with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.

(1) In the negotiations that are carried out to determine the black start capability service cost regarding the related generation facility, investment costs regarding emergency diesel generators are not taken into consideration in case generation facility has an emergency diesel generator that meet the qualification of starting-up without needing any kind of external energy power when this Regulation is published, and amortization of the investment costs regarding emergency diesel generator is finalized.

PROVISIONAL ARTICLE 8 Ancillary services regarding distribution system

[Previous provisional Article 8]

⁴³(1) Arrangements regarding the provision of ancillary services required by the distribution system operators within the frame of Electricity Market Distribution Regulation are included within the scope of this Regulation until 31/12/2012 in case the distribution system operators apply and the arrangements are deemed appropriate by Board decision.

ARTICLE 64 Effectiveness

⁴⁴⁴⁵(1) Enforcement dates of this Regulation are as follows;

- a) Provisions regarding Secondary Frequency Control as of 01/05/2010,
- b) Provisions regarding Reactive Power Control as of 01/01/2011, on its publication date,
- c) Provisions regarding the Momentary Demand Control service as of 1/7/2012,
- ç) Provisions regarding the Black Start Capability as of 1/7/2012,
- d) Provisions regarding the Non-spinning Reserves as of 1/10/2013,
- e) Provisions regarding the transfer of the secondary frequency control obligation as of x/xx/201x,
- f) Other articles on the twentieth day following that of its publication.

ARTICLE 65 Enforcement

(1) The President executes provisions of this Regulation.

⁴³ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

⁴⁴ Amended with the Regulation published in the Official Gazette no. 27580 dated 13/05/2010.

⁴⁵ Amended with the Regulation published in the Official Gazette no. 28145 dated 17/12/2011.