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General Conditions

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PREAMBLE TO THE ARAB GRID CODE

The operation of a National Power System in an interconnection framework affects the distribution of flows close to the borders and the whole interconnected system as far as the balancing of the System is concerned.

Accordingly, this mutual influence leads to unavoidable interferences between the conditions in this **Arab Grid Code** and the National Grid Codes.

Despite the unifying effects of the physical laws governing the **Networks**, the standardization progress, and the uniformity among products of the electricity industry, differences between this **Arab Grid Code** and the National Grid Codes can induce differences in matter of:

- a) Organization to be adapted
- b) Insufficient power of the **TSOs** to transfer the obligations to the users of the grid
- c) Double work to comply with more than one code even if similar
- d) Economy
- e) Changes in merit orders in managing the resources
- f) Loadability of the network elements

Pursuant to articles of the **General Agreement**, it is evident that this **Arab Grid Code** is a set of rules that shall become mandatory for the **Member States** which commit themselves to apply it irrespective of the individual **National Grid Codes** (**GA** art. 2.1. and 3.2). Even if this neither means that the **Arab Grid Code** has the priority against the National Grid Codes, nor that the **Arab Grid Code** introduces a further hierarchical level of control, it shall be in the interest of Member States to actively participate to this action.

This is also expressed by the **General Agreement** which states that the **Arab Grid Code** does not limit the sovereign Rights of the National Grid Code and that the **General Agreement** itself is “a commercial rather than public or governmental act” (**GA** art. 7.1. and 7.2).

A second reason why cooperation is pivotal, lies on the matter of fact that if efficiency is pursued, new centralized procedures must be built, as they concern new centralized processes at sub-regional level.

UCTE¹ is a successful story of voluntary association proving the importance of the spirit of cooperation. **TSOs** in UCTE covered almost the whole interconnected System in Continental Europe, even without the formal support of the Governments, managed to gather all the **TSOs** for cooperation in a supportive way and equal partnership.

According to the aspects previously highlighted, an organizational structure of entities is required. Entities dedicated to the coordination of interconnection matters for Sub-Regional Groups are envisioned and should play a role because of their pivotal function in modern power systems.

¹ UCTE was established in 2000 as a spin-from UCPTe and disbanded in 2008.

In this regard, the current state of the **Member States** is characterized by some National Grids which are already organized according to Groups, having already National Codes (Operation and Planning) which are coordinated with the rules governing the Sub-Regional **TSOs**. Such systems have already developed a solid background with practices specific to an interconnection environment. It follows that:

- a) a harmonization at different levels of the codes need to be considered;
- b) the central entities have already a valuable experience helpful to build up procedures and methodologies fitting for the purposes of fast development of Market;
- c) the participation to the activities for the development of the **Arab Grid Code** should be encouraged, avoiding double counting of votes in the decisions and considering that **TSOs** are the ultimate responsible subjects for the operation.

1 OBJECTIVE

The **Arab Grid Code** governs technical aspects of the Pan-Arab Electricity Market to provide a set of principles governing the status, the operation, and the development of Arab International Interconnections.

The **Arab Grid Code** is consistent with and complements the General Agreement, governing legal aspects of regional trade, and the **PAEM Agreement**, governing commercial aspects of regional trade, towards the implementation of the **PAEM**, within the **Pan-Arab Advisory and Regulatory Committee (Pan-Arab ARC)**, under the **Arab Ministerial Council for Electricity**.

2 SCOPE OF APPLICATION

The **Arab Grid Code** applies to the interconnection and concerns how to develop and operate the interconnected systems, safeguarding security and economy, in order to facilitate the development of the electricity market in the Pan-Arab region for the benefit of the consumers.

The grid operators, either **TSOs** or equivalent departments in vertically integrated utilities, are subject to the compliance with the **Arab Grid Code**; the **Market Facilitators**; the **Users** of the **Transmission System**, the sub-regional **TSOs** and the **Authorities**. Each of them shall comply with the obligations for their different roles.

Pursuant to art. 2.1 of the General Agreement, **TSOs** shall proactively cooperate in deploying the indications of this **Arab Grid Code**. **TSO** shall work for a harmonization of practices without jeopardizing the security of operation putting in place the following actions, at least:

- a) Providing high level technical support to the **Member States** in the discussions for approving the **Arab Grid Code** and in proposing future improvement;
- b) Taking part to the process that aims at drafting procedures and designing steps to finalize the **Arab Grid Code** and derived detailed application documents;
- c) Striving for the unanimity when approving documents;
- d) Self-declare the main noncompliance and negotiate a time to overcome them;
- e) Supporting a compliance Monitoring System aiming to check the progresses.

The **Sub-Regional TSOs** are also subject to the **Arab Grid Code**. They are also admitted to the works of the relevant committees and must contribute to the coordination of centralized functions.

Users of the Grid shall comply with the **Arab Grid Code** through the compliance with the **National Grid Codes**.

Pursuant to Art. 3.7.2 of the **GA**, **TSOs** and **Authorities** shall comply with the **Arab Grid Code** by playing the key role of linking it with the National Grid Codes, by monitoring the application of the **Arab Grid Code**, by adopting the necessary changes into their National Grid Codes for compliance; both for the purposes of transparency and operational security.

3 MODIFICATION OF THE ARAB GRID CODE

3.1 Introduction and Interpretation

The provisions of this **Arab Grid Code** may only be amended when the applicable procedures set forth in this Chapter 3 have been followed. An amendment to this **Arab Grid Code** becomes effective only upon approval by the **Pan-Arab ARC** or the **Arab TSOs Committee** according to the procedures set forth in this Chapter 3. Amendments can be proposed by **Governing Institutions**, the **Arab TSOs Committee** or **PAEM Participants** according to the procedures set forth in this Chapter 3. In formulating and approving amendments to this **Arab Grid Code**, the **Pan-Arab ARC** and the **Arab TSOs Committee** will take into consideration the objectives of the **PAEM** as set forth in the **GA**.

3.2 Initiation of Amendments

A **PAEM Participant**, a **TSO** or the **Sub-Regional Market Facilitator** may file an amendment submission to the **Arab TSOs Committee** to propose a review of one or more amendments to this **Arab Grid Code**. The amendment submission will include a statement of the reasons for which an amendment may be necessary or desirable.

The **Arab TSOs Committee** may request that the person submitting the amendment submission provide further particulars.

The **Pan-Arab ARC** will publish quarterly a **Regulation Report**. In the **Regulation Report**, the **Pan-Arab ARC** will identify distortions and other problems associated with the **PAEM**, and based on its analysis, will propose improvements, including, as necessary, recommendations for amendments to the **PAEM Agreement** and this **Arab Grid Code**. In forming its analysis and recommendations in the **Regulation Report**, the **Pan-Arab ARC** will take into consideration the amendment submissions filed with the **Arab TSOs Committee**, as well as those generated by the **Pan-Arab ARC** itself. The **Regulation Report** will include a copy of each amendment submission.

The **PAEM Participants**, the **TSOs**, the **Sub-Regional Market Facilitator** and the **Arab TSOs Committee** will have a period of two weeks from the time the **Regulation Report** is published to file written comments with the **Pan-Arab ARC**.

The **Pan-Arab ARC** will file the **Regulation Report** with the **Ministerial Council** when it is satisfied that the report takes into consideration the views of the parties that have filed amendment submissions or written comments on the **Regulation Report**.

3.3 Review and approval of amendments to the Arab Grid Code

The **Arab TSOs Committee** will review the proposed amendments and determine the appropriate procedure and timetable for review and approval of the proposed amendments. The **Arab TSOs Committee** will have regard for the significance and urgency of the proposed amendments when developing the procedure and timetable for the review.

When proposed amendments are minor and relate to secondary documentation referenced in the **Arab Grid Code**, the **Arab TSOs Committee** will document the arguments related to the proposed amendments along with its decision and publish its decision on its website.

The **Arab TSOs Committee** will make the amendments that it has approved to the **Arab Grid Code**.

When proposed amendments are not minor, the **Arab TSOs Committee** will publish on its website the proposed amendments, inviting written submissions concerning the matter by a specified date.

Where in the opinion of the **Arab TSOs Committee** there is consistency among the views expressed in the written submissions, it will document the arguments related to the proposed amendments along with its recommendations and forward the documentation to the **Pan-Arab ARC** for review and approval. Once approved by the **Pan-Arab ARC**, the **Arab TSOs Committee** will make the approved amendments to the **Arab Grid Code**.

Where in the opinion of the **Arab TSOs Committee** there is a diversity of views expressed in the written submissions, it will notify all **PAEM Participants** and the governing institutions of the procedure and schedule for a review and approval process to be carried out by the **Pan-Arab ARC**. The notification will include:

- a) documentation of the proposed amendments;
- b) the date or dates when the **Pan-Arab ARC** will complete its review and decide on the proposed amendments.

Following its review, the decision of the **Pan-Arab ARC** will be published on its website including the proposed amendments and the reasons for its decision. The **Arab TSOs Committee** will make the approved amendments to this **Arab Grid Code**.

In situations where the **Arab TSOs Committee** feels an amendment to the **Arab Grid Code** precludes the review procedure identified in this Section 3.3, it will publish an interim amendment with the intent that the interim amendment will be in effect only until such time as the review procedure identified in this Section 3.3 can be formally conducted.

3.4 Experts and other assistance

The **Arab TSOs Committee** and the **Pan-Arab ARC** may hire such consulting assistance and seek such expert external advice as may be necessary or desirable for the purpose of the fulfillment of its responsibilities under this Chapter 3.

In carrying out any of its responsibilities under this Chapter 3, the **Arab TSOs Committee** and the **Pan-Arab ARC** may solicit the assistance of the **Sub-Regional Market Facilitator** and the **TSOs**.

3.5 Interpretation Bulletins

The **Arab TSOs Committee** may, from time to time upon receipt of material requests for clarification of the interpretation or application of this **Arab Grid Code**, publish bulletins as to the interpretation or application of this **Arab Grid Code**. The **Arab TSOs Committee** will give notice to all **PAEM Participants** and governing institutions of any bulletins so published.

4 ORGANIZATION OF THE PAEM

The **Arab Grid Code** follows the provisions of the **GA** as per the description of the institutional structure created to regulate and operate the **PAEM**, and the identifications of the different classes of **PAEM** participants, and their rights and obligations under the **PAEM Agreement** and this **Code**.

Annex A resume the main insights on this matter.

5 UNFORESEEN CIRCUMSTANCES

If circumstances arise, which are not contemplated by the provisions of this Code, the relevant committee, as assigned under the Pan-Arab ARC shall, to the extent reasonably practicable in the circumstances, consult with all affected **Owners** of the **Facilities**, **TSOs** and other relevant **Parties** to reach agreement as to what should be done.

If agreement between the relevant committee, and such **Owners** of the **Facilities**, **TSOs** and other relevant **Parties** cannot be reached in a reasonable time, the relevant committee shall determine the best course of action according to the principle of Prudent Utility Practice.

The instructions defined by the relevant committee shall be consistent with the current National provisions of affected **TSOs** and other **Parties**.

The affected **Owners** of the **Facilities**, **TSOs** and other relevant **Parties**, shall comply with all instructions given by the relevant committee. The relevant committee shall, as soon as reasonably practicable following the unforeseen circumstances, notify all relevant details to the relevant committee for consideration of review(s) to be introduced in this Code.

6 FORCE MAJEURE

In situations of **Force Majeure**, the provisions of this **Arab Grid Code** may be suspended in whole, or in part, pursuant to any directions given by the **Pan-Arab ARC**.

A **Party** will not be liable to any other **Party** for any failure or delay in the performance of any of its obligations under this **Arab Grid Code** to the extent that such failure or delay is due to a **Force Majeure Event**:

- c) for so long as the **Force Majeure Event** continues, and for such reasonable period thereafter as may be necessary for the **Party** to resume performance of the obligation; and,
- d) where and to the extent that the failure or delay in performance would not have been experienced but for such **Force Majeure Event**.

If a **Force Majeure Event** prevents or delays a **Party** from performing any of its obligations under the **Arab Grid Code**, that Party shall:

- a) Promptly notify any other **Party** involved and the **Pan-Arab ARC** of the **Force Majeure Event** within 3 days of the date on which the **Party** becomes aware of the occurrence of the **Force Majeure Event**. The notice shall include:

- i. the assessment in good faith of the nature of the **Force Majeure Event**;
 - ii. the effect that the **Force Majeure Event** will have on its ability to perform any of its obligations;
 - iii. the measures that the **Party** proposes to take to alleviate the impact of the **Force Majeure Event**.
- b) Not be entitled to suspend performance of any of its obligations under the **Arab Grid Code** to any greater extent or for any longer time than the **Force Majeure Event** requires it to do.
- c) Use its **Best Efforts** to mitigate the effects of the **Force Majeure Event**, remedy its inability to perform, and resume full performance of its obligations.
- d) notify the **Pan-Arab ARC** and the other **Parties** and will as soon as practicable **Publish** notice of any material change in the information contained in any previous notice given and **Published** pursuant to this Chapter 6.
- e) **Publish** notice to the other Party of the cessation of the **Force Majeure Event** and when it resumes performance of any obligations affected by the **Force Majeure Event**.

Nothing in Chapter 6 shall excuse a **Party** from performing any of its obligations contained in those provisions of this **Arab Grid Code** that govern while the grid is in a high-risk or Emergency operating state.

7 NON-COMPLIANCE AND DEROGATIONS

This Chapter summarizes the process for requesting a derogation. It also sets out the criteria which shall be considered when considering a derogation request, and the process which shall be followed.

The provisions of this Chapter shall be updated as required from time to time to reflect changes in the Codes, in the **General Agreement** and **PAEM Agreement** and respective processes.

7.1 Derogation Definition

A derogation is a direction from the relevant committee relieving the **Party** from its obligation to comply with a requirement in specified circumstances and to a specified extent.

The derogation shall have an expiration date so that the need for it can be systematically reviewed, and progress towards a compliant operation can be monitored. The derogation shall not apply to a period before the date the direction is issued.

A derogation shall be granted to an individual **Party** and cannot be transferred.

7.2 Derogation Request

Continued compliance with technical requirements is the responsibility of each relevant affected **Party**. The relevant committee recognizes there may be occasions when an

affected **Party** assesses that it is not able to comply with a requirement, or that the requirements placed upon it may result in an inefficient outcome either in the short or longer term.

Circumstances which may require a derogation include the following:

- a) to prevent a breach of an affected **Party's** obligations while a system or plant item is restored to compliance with a technical requirement. Such a derogation is likely to be limited to a timescale in which the compliance could reasonably be expected to be restored;
- b) to prevent a breach of an affected **Party's** obligations while changes to a Code and/or license condition is made. Such a derogation is likely to be limited to a timescale in which the compliance could reasonably be expected to be restored;
- c) to permit a system or plant item to operate out of compliance with the technical requirement either definite, indefinitely or for the lifetime of the system or plant item for reasons that are acknowledged by the relevant **Party**.

7.3 Types of Derogation

Three categories of derogation shall be considered:

- a) Definite: Continues for a period specified in the direction
- b) Lifetime: Specific to a system or plant item and continues for the lifetime of the equipment forming that system or plant item. In case of equipment or plant item replacement, a further derogation is made, or the derogation is revoked. This category of derogation shall be granted when there are strong grounds for inaction to restore compliance.
- c) Indefinite: Continues until a further derogation is made or the derogation is revoked. This category of derogation is granted if there are strong grounds for omitting an expiration date.

Lifetime and indefinite derogation shall be issued in very limited circumstances specified by the **relevant TSO**. It is usual practice for derogations to be limited for a period that is specified in the direction. The relevant committee may issue further directions that can vary or withdraw previous derogations.

7.4 Information required in a derogation request

Where a **Party** has identified that it does not or will not in the future be able to comply with relevant obligations in a provision of this **Code**, the **Party** should make a written request to relevant committee for a derogation to comply with such obligations.

The request shall include:

- a) Details of the applicant, including:
 - i. the full name, address and contact information for the **Party** seeking a derogation;
 - ii. a description of the **Party** seeking a derogation (including, where relevant, information on the location of the relevant site that the derogation is being asked for);

- b) A clear description of the non-compliance including:
 - i. code requirement;
 - ii. the required performance;
 - iii. the existing capability of the system or plant;
- c) A clear description of the reasons why the non-compliance has occurred or is expected to occur;
- d) A comprehensive and, wherever possible, quantitative assessment, of the impact of the non-compliance on:
 - i. Consumers
 - ii. Security of supply
 - iii. Competition
 - iv. Data reliability and data quality
 - v. Health and safety and the associated risk management measures
 - vi. Other parties affected by the non-compliance, including the ability to operate the system;
- e) Demonstration that the requested derogations would have no adverse effect on cross-border trade;
- f) Details of actions to mitigate risks to consumers or other affected parties while the non-compliance exists;
- g) A description of the proposal for restoring compliance (where applicable) including timetable of works;
- h) A description of the alternative actions that have been considered;
- i) The proposed duration of the derogation requested;
- j) All other information needed.

All technical terms shall be fully explained, and the request shall be presented as clearly as possible to avoid unnecessary delays in the assessment of the request.

The **Party** seeking a derogation shall justify the derogation request in terms of both the specific circumstances and the expected duration. Parties seeking a derogation shall give as much notice as possible when making derogation requests since a derogation will not be granted unless relevant committee is satisfied that the request is justified.

7.5 Assessment of derogation applications

Each derogation request is assessed by relevant committee, individually on its merits, against the criteria outline in the following, considering:

- a) the nature of derogations;
- b) the likelihood of similar derogation requests in the future;
- c) the effect of the decision on future derogation requests;
- d) any other relevant information.

Relevant committee shall consult with the **Party** making the request to clarify points relating to the derogation request.

The criteria used to assess derogation requests are listed below.

Before making any changes to the criteria, relevant committee shall consult the relevant **Parties**. The possibility to review and amend the criteria for granting derogations shall not affect the derogations already granted which shall continue to apply until the scheduled expiration date (as specified in any derogation decision).

The following set of criteria is used to evaluate the requested derogation. The derogation must not result in:

- a) Significant risks associated with the non-compliance to the affected **Party** seeking a derogation, other relevant parties or connected customers.
- b) Avoidable adverse impacts (immediately or in the longer term) on the affected **Party** seeking derogation, other relevant parties or connected customers.
- c) Additional measures that could be taken to further mitigate the impact of the non-compliance on the affected **Party** seeking a derogation, other relevant parties or connected customers for its duration.
- d) Outstanding objections from other parties who are materially affected by the non-compliance.
- e) Competitive advantages to the affected **Party** seeking a derogation arising from the derogation.
- f) Other reasonable options to address the non-compliance that have not been considered.
- g) Adverse effects on cross-border trade.

Where an applicant is unable to satisfy all the above criteria, relevant committee shall assess how far the applicant's ability to satisfy the criteria is enough to justify the granting of a derogation.

Relevant committee shall use his judgement in assessing any derogation requests and shall advise any applicant of additional information requirements that were not included in the original request.

7.6 Derogation decision

If relevant committee considers that the derogation request is justified, then it shall issue a direction to the affected **Party** granting the necessary relief from the relevant obligation, for a time period specified in the direction.

If relevant committee considers that the derogation request has not been sufficiently justified, then it shall refuse the derogation.

Relevant committee shall revoke a derogation if the circumstances and underlying reasons for the derogation no longer apply.

In case of derogation refusal or revoke, the applicant shall present a realistic and comprehensive implementation plan that includes:

- a) the works required to meet compliance, where applicable;
- b) the timetable for those works that show a deadline that is reasonable and is achievable;

- c) any measures to mitigate the risks to other parties that will be (or have been) taken until the non-compliance is restored.

7.7 Register of derogations

Relevant committee shall maintain a current register of all derogations that have been granted and refused. The register shall contain:

- a) the technical requirement or requirements for which the derogation was granted or refused;
- b) the content of the derogation;
- c) the monitoring of the expiring of derogations;
- d) the reasons for granting or refusing the derogation, and
- e) the consequences resulting from granting the derogations.

8 DISPUTE RESOLUTION

Disputes that arise in relation to **Arab Grid Code** or among Parties will be resolved through the following steps.

- a) Bilateral negotiation among the disputing Parties as follows:

If any claim, dispute or difference arises out of or in connection with this Code, including any question regarding its existence, breach or validity ("Dispute") the aggrieved **Party** shall send by certified mail to the other Parties (such aggrieved **Party** and defendant Parties together the "Parties in Dispute") and to the relevant committee, a Notice of Dispute adequately identifying and providing details of the Dispute ("Notice of Dispute").

The Parties in Dispute appoint a senior representative with authority to resolve the matter ensuring that the senior representatives meet in good faith to resolve the Dispute.

- b) If the dispute is not resolved through negotiations, the dispute shall be resolved through the Pan-Arab ARC as follows.

The Parties in Dispute shall provide to the relevant committee a Final Notice of Dispute requesting the relevant committee to decide the matter in Dispute. The aggrieved **Party** submitting the Final Notice of Dispute, shall coincidentally send copies of all documents submitted to the relevant committee to the other Parties in Dispute via the same means of communication.

The Parties in Dispute served with a Final Notice of Dispute shall file a Notice in Response to both the issuer of the Final Notice of Dispute and the relevant committee within twenty-eight days of receipt of the Final Notice of Dispute

The relevant committee shall decide the Dispute based on the information received and provide its written decision to the Parties in Dispute, together with reasons for its decision.

- c) If any Parties in Dispute is dissatisfied with the decision of the relevant committee, a Party in Dispute may submit the Dispute to the Ministerial Council for Electricity.

The Parties in Dispute shall not refer the Dispute to the Ministerial Council or commence any arbitration in relation to a Dispute until they have attempted to settle the Dispute by obtaining a decision of the relevant committee, provided that a Member State in Dispute would not be seriously prejudiced by a delay in commencing arbitration. In that case the Member State in Dispute shall be entitled to proceed directly to arbitration.

The Party in Dispute submitting the Notice of Dispute to the Ministerial Council shall send copies of all documents so submitted to the other Parties in Dispute coincidentally, and by the same means of communication.

The Ministerial Council shall decide the Dispute based on the information submitted and provide its written decision to the Member States in Dispute, together with reasons for its decision.

- d) If a Party in Dispute is dissatisfied with the decision of the Ministerial Council, it may submit the Dispute to arbitration.

Subject to compliance with the previous provisions of this Chapter, the Parties in Dispute have the right to arbitration. All disputes arising out of, or in connection with, the Code shall be finally settled by one or more arbitrators. The seat of arbitration shall be elected by relevant committee.

The arbitration award shall be final and binding on all parties.

- e) If a Party in Dispute fails to comply with a decision of the arbitrator, it shall be subject to the sanction of suspension of its rights to participate in the PAEM, which may be exercised by the relevant committee serving notice of such sanction on the non-compliant Party.

9 INTERCONNECTION CODE INTERPRETATION

If any **Owners** of the **Facilities**, **TSOs** and other relevant **Parties** require additional interpretation of the wording or application of any provision of any of the Interconnection Codes, they may request relevant committee for such interpretation. Provided that the request is reasonable, then the relevant committee shall provide **Owners** of the **Facilities**, **TSOs** and other relevant **Parties** with an interpretation of the relevant part.

If an **Owner** of the **Facilities**, a **TSO** or another relevant **Parties**, acting reasonably, deems that an interpretation provided by the relevant committee is unreasonable or inappropriate, the matter shall be referred to the Pan-Arab ARC for consideration.

10 HIERARCHY

In the event of any conflict between the provisions of any of the Interconnection Codes and any National Codes or rules, contract, bilateral agreement or arrangement between a **TSO**, a **User** or other relevant **Parties**, the provisions of the Arab Grid Code shall prevail unless the Arab Grid Code expressly provides otherwise.

11 CONFIDENTIALITY

All data exchanged relating to any of the Interconnection Grid Codes shall be treated by all **Owners** of the **Facilities**, **TSOs** or other relevant **Parties** as confidential.

Confidential data does not include:

- f) information that is in the public domain provided that specific items of information shall not be considered as in the public domain, merely because more general information is in the public domain, and provided that the information is not in the public domain as a result of a breach of confidence by the **Owner** of the **Facilities**, a **TSO** or another relevant **Parties** seeking to disclose the information or an **Owner** of the **Facilities**, a **TSO** or other relevant **Parties** to whom it has disclosed the information;
- g) information required to be published or information required to be disclosed in any of the **Arab Grid Codes**, and
- h) information that must be disclosed in compliance with a judicial or governmental order or other legal process.

The relevant committee shall consult with the **Owners** of the **Facilities**, the **TSOs** and other relevant **Parties** regarding the publication of any of the data exchanged. Aggregate data may be made available by the **Owners** of the **Facilities**, the **TSOs** and other relevant **Parties** when requested by any other **Owners** of the **Facilities**, **TSO** or other relevant **Party**. This data shall be used only for the purpose specified in the request and shall be treated by the **Owners** of the **Facilities**, the **TSOs** and other relevant **Parties** as confidential. All such disclosure of confidential information shall be subject to a written Confidentiality Agreement duly signed between involved **Owners** of the **Facilities**, **TSOs** or other relevant **Parties**. Such confidential information shall not be disclosed to other parties without the express written consent of the parties to the Confidentiality Agreement.

12 LANGUAGE

This **Arab Grid Code** is written in English. In case of any discrepancies between the English version and a version translated into any other language, the English version shall prevail.

13 REFERENCES

- [1] European Council, EUCO 169/14, 23 and 24 October 2014.
- [2] European Commission, "Commission Regulation 2016/631 establishing a network code on requirements for grid connection of generators," 2016.
- [3] European Commission, Network code on requirements for grid connection of high voltage direct current systems and direct current-connected power park modules, Official Journal of the European Union, (L 241/1), 1–65, 2016.
- [4] European Commission, Commission regulation 2016/1388 Establishing a Network Code on Demand Connection, 2016.
- [5] European Commission, "Commission Regulation 2017/1485 establishing a guideline on electricity transmission system operation," 2017.
- [6] European Commission, *COMMISSION REGULATION (EU) 2017/2196 of 24 November 2017 establishing a network code on electricity emergency and restoration*, 2017.
- [7] European Commission, Commission Regulation (EU) 2016/1719 of 26 September 2016 establishing a guideline on forward capacity allocation, 2016.
- [8] European Commission, Commission Regulation (EU) 2015/1222 of 24 July 2015 establishing a guideline on capacity allocation and congestion management, 2015.
- [9] European Commission, Commission Regulation (EU) 2017/2195 of 23 November 2017 establishing a guideline on electricity balancing, 2017.
- [10] NERC, *Reliability Standards for the Bulk Electric Systems of North America Updated June 5, 2019*, 2014.
- [11] SAPP, Transmission Planning Criteria, Harare, Zimbabwe., 2012.
- [12] GCCIA, *GCCIA Interconnector Transmission Code Issue 2.1 May 2013 (see PC Planning Code Planning requirements for connection to the transmission network)*, 2014.
- [13] Med-TSO, Mediterranean Project 1, <https://www.med-tso.com/publications1.aspx?f=>, 2015 - 2018.
- [14] Med-TSO, Mediterranean Project 2, <https://www.med-tso.com/publications2.aspx?f=>, 2018-2020.
- [15] Med-TSO, Proposal of Common Rules about the provision of system services: Mediterranean Grid Code chapter, 2018.
- [16] European Commission, *REGULATION (EU) No 347/2013 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 17 April 2013 on guidelines for trans-European energy infrastructure and repealing Decision No 1364/2006/EC and amending Regulations (EC) No 713/2009, (EC) No 714/2009 and (EC) No 715/2009*, 2014.
- [17] ENTSO-E, *ANNEX II Scenario Report. Methodology*, 2014.
- [18] ENTSO-E, *TYNDP 2018 Data and expertise as key ingredients*, 2014.
- [19] ENTSO-E, *TYNDP 2018 Identification of system needs methodology*, 2014.
- [20] ENTSO-E, *Identification of system needs using a flow based market model approach*, 2014.
- [21] ENTSO-E, *TYNDP 2018 TYNDP CBA from assessment indicators to investment decisions*, 2014.

- [22] ENTSO-E, *ENTSO-E Practical implementation document for inclusion of transmission and storage projects in the 10 year network development (TYNDP)2018 2 October 2017*, 2014.
- [23] ENTSO-E, *Proposed Methodology for Monetization of Security of Supply Adequacy Benefit of TYNDP Projects*, 2014.
- [24] ENTSO-E, *TYNDP 2018 Regional Insight Report North South Interconnections East*, 2014.
- [25] FERC, FEDERAL ENERGY REGULATORY COMMISSION (Docket Nos. RM16.17.000; Order No. 860) Final rule on Data Collection for Analytics and Surveillance and Market-based rate purposes (Issued July 18, 2019), 2019.
- [26] FERC, *FEDERAL ENERGY REGULATORY COMMISSION 18 CFR Parts 35 and 37 (Docket Nos. RM05.17.000 and RM05.25.000; Order No. 890) Preventing Undue Discrimination and Preference in Transmission Service (Issued February 16, 2007)* AGENCY, 2014.
- [27] NERC, *Standard TPL.001.1 System Performance Under Normal Conditions*, 2014.
- [28] NERC, *Standard TPL.002.1b System Performance Following Loss of a Single BES Element*, 2014.
- [29] NERC, *Standard TPL.003.1a System Performance Following Loss of Two or More BES Elements*, 2014.
- [30] NERC, *Standard TPL.004.1 System Performance Following Extreme BES Events*, 2014.
- [31] NERC, *Standard TPL.005.0 Regional and Interregional Self-Assessment Reliability Reports*, 2014.
- [32] NERC, *Standard TPL.006.0.1 Assessment Data from Regional Reliability Organizations*, 2014.
- [33] NERC, *Reliability Assessment Guidebook Version 3.1 August 2012*, 2014.
- [34] NERC, *Standard TPL.001.4 Transmission System Planning Performance Requirements*, 2014.
- [35] PJM, *Book 2 Inputs and Process*, 2014.
- [36] PJM, *2017 PJM Regional Transmission Expansion Plan February 28, 2018 Book 3 Studies and Results*, 2014.
- [37] PJM, *2017 PJM Regional Transmission Expansion Plan February 28, 2018 Book 1 PJM 2017 RTEP in Review*, 2014.
- [38] Med-TSO, *Deliverable 2.3 Transparency: Public information harmonization*, 2014.
- [39] Med-TSO, *Deliverable 2.1 Guidelines for Coordinated Planning a) Grid Planning Methodology*, 2014.
- [40] Med-TSO, *Deliverable 2.1 Guidelines for Coordinated Planning c) Procedures for the Mediterranean Master Plan*, 2014.
- [41] Med-TSO, *Deliverable 2.1. A Proposal of Common Rules about the provision of system services: Mediterranean Grid Code chapter*, 2014.
- [42] Med-TSO, *Deliverable 2.1 Guidelines for Coordinated Planning b) Survey and Tools for supporting the Harmonized Planning Process*, 2014.
- [43] FERC, *FEDERAL ENERGY REGULATORY COMMISSION 18 CFR Part 35 [Docket No. RM10.23.000; Order No. 1000] Transmission Planning and Cost Allocation by Transmission Owning and Operating Public Utilities (Issued July 21, 2011)*, 2014.
- [44] Med-TSO, *Proposal of a Common Tentative Road Map (CTRM) for adoption and compliance with the proposed Common Target Regulatory Framework.*, 2014.

- [45] Continental Europe, *OPERATION HANDBOOK*, 2014.
- [46] PJM, *PJM Manual 03: Transmission Operations Revision: 55*, 2014.
- [47] PJM, *PJM Manual 13: Emergency Operations Revision: 71*, 2014.
- [48] PJM, *PJM Manual 36: System Restoration Revision: 26*, 2014.
- [49] PJM, *PJM Manual 37: Reliability Coordination Revision: 16*, 2014.
- [50] PJM, *PJM Manual 38: Operations Planning Revision: 12*, 2014.
- [51] Eskom, *The South African Grid Code; Preamble Version 9.0*, 2014.
- [52] Eskom, *The South African Grid Code; System Operation Code Version 9.0*, 2014.
- [53] Eskom, *The South African Grid Code; The Information Exchange Code Version 9.0*, 2014.
- [54] Eskom, *The South African Grid Code; The Network Code Version 9.0*, 2014.
- [55] GCCIA, *OC1 Operating Code No. 1 Demand Forecasting*, 2014.
- [56] GCCIA, *OC2 Operating Code No. 2 Operational Planning*, 2014.
- [57] GCCIA, *OC3 Operating Code No. 3 Operating Reserve*, 2014.
- [58] GCCIA, *OC4 Operating Code No. 4 Demand Curtailment*, 2014.
- [59] GCCIA, *OC5 Operating Code No. 5 Operational Liaison*, 2014.
- [60] GCCIA, *OC6 Operating Code No. 6 System Fault and Incident Reporting*, 2014.
- [61] GCCIA, *OC7 Operating Code No. 7 Contingency Planning and System Restoration*, 2014.
- [62] GCCIA, *OC8 Operating Code No. 8 Safety Coordination*, 2014.
- [63] GCCIA, *OC9 Operating Code No. 9 Numbering and Nomenclature*, 2014.
- [64] GCCIA, *OC10 Operating Code No. 10 Testing and Monitoring*, 2014.
- [65] GCCIA, *OC11 Operating Code No. 11 System Tests*, 2014.
- [66] GCCIA, *OC12 Operating Code No. 12 System No Load Energy Losses*, 2014.
- [67] Med-TSO, *Compendium and summary of relevant codes / regulations / contracts and practices both existing and short term expected Deliverable 1.1. Starting Regulatory framework*, 2014.
- [68] EAPP, "EAPP Grid Code 2011," EAPP, 2011. [Online].
- [69] ECRA, "Grid Code Saudi Arabia 2016," 2016. [Online].
- [70] PJM, *PJM Manual 3A: Energy Management System (EMS) Model Updates and Quality Assurance (QA) Revision: 17*, 2014.
- [71] ENTSO-E, *Accompanying document to 2nd ENTSO-E Guideline for Cost Benefit Analysis of Grid Development Projects*, 2014.
- [72] ENTSO-E, *2nd ENTSO-E Guideline For Cost Benefit Analysis of Grid Development Projects FINAL Approved by the European Commission 27 September 2018*, 2014.
- [73] PJM, *PJM Manual 10: Pre-Scheduling Operations*, 2014.

14 ANNEX A

14.1 Scope

This Annex describes the institutional structure created to regulate and operate the **PAEM** and identifies the different classes of **PAEM Participants** and their rights and obligations under the **PAEM Agreement** and this **Arab Grid Code**.

Further details on the institutions created to regulate and operate the **PAEM** are provided in the **GA**.

14.2 Description of Governing Institutions

The institutional organization governing the **PAEM** is specified in the **GA**. The regulatory organization comprises:

- a) The **Arab Ministerial Council for Electricity (Ministerial Council)**;
- b) The **Pan-Arab ARC**;
- c) The **Arab TSOs Committee**; and
- d) The **Secretariat**.

The **Ministerial Council** is an existing council that has final approval authority over most aspects of the **PAEM**. It is not involved with the day-to-day operation of the **PAEM**.

The **GA** creates the **Pan-Arab ARC**, the **Secretariat** and the **Arab TSOs Committee**.

The operational structure of the **PAEM** comprises the **Sub-Regional Market Facilitator** and the national **TSOs**. The **GA** creates the **Sub-Regional Market Facilitator**, while the national **TSOs** are existing bodies responsible for the day-to-day operation of the domestic electricity markets of **Member States**.

The **Secretariat** is responsible conducting day-to-day administrative tasks, facilitating the work of the regional market committees, monitoring and maintaining comprehensive information systems and serving corresponding needs of the **Ministerial Council**, the **Pan-Arab ARC** and the **Arab TSOs Committee**.

The **Arab TSOs Committee** will include as members the national **TSOs** and the **Sub-Regional Market Facilitator**. It does not play any direct role in the governance or operation of the **PAEM**.

The **Pan-Arab ARC** will provide regulatory oversight of the **PAEM** and will include as members the national Regulators.

The **GA**, this **Arab Grid Code** and the **PAEM Agreement**, and subsequent regulations adopted under this **Arab Grid Code**, constitute the **PAEM** governance documentation which establishes the rules to be followed by the governing institutions and **PAEM Participants**.

The governing institutions and the **PAEM** governance documentation aim to ensure that **PAEM** operation and administration comply with the objectives and functions established in the **GA** in a transparent and efficient manner.

14.3 PAEM Regulation - The Pan-Arab ARC

The **Pan-Arab ARC** is the regulatory entity for the **PAEM** created per the **GA**. The roles and responsibilities of the **Pan-Arab ARC** are to:

- a) Ensure compliance with the rules and legal framework of the **PAEM** including the **GA**, the **PAEM Agreement** and this **Arab Grid Code**;
- b) Ensure that **PAEM** participant behavior and the functioning of the **PAEM** is consistent with the intent of the **GA**;
- c) Review and advise on various fees and tariffs for regulated activities in the **PAEM** including each **Member State's** transmission services charge to be applied to transactions in the **PAEM**;
- d) Ensure transmission services charges are applied to transactions in the **PAEM** in a fair and non-discriminatory manner;
- e) Review and advise on proposed changes to the **PAEM Agreement**;
- f) Review and approve proposed changes to this **Arab Grid Code**;
- g) Review and advise on proposals for expansion of international interconnection facilities;
- h) Review and approve generation capacity reserve criteria;
- i) Review and advise on rules governing allocation of international interconnection capacity;
- j) Review and approve the methodology for calculation of available transmission capacity;
- k) Review and advise on credit obligations and payment default procedures;
- l) Mediate disputes between and among **PAEM Participants** and the governing institutions;
- m) Coordinate with the national regulators; and
- n) Facilitate the development of the **PAEM**.

The **Pan-Arab ARC** constitutes an entity legally sanctioned and authorized to carry out all acts, contracts and other actions required to implement its mandate to regulate the **PAEM**.

In its capacity to ensure compliance with the **GA**, the **PAEM Agreement** and this **Arab Grid Code** and promote development of the **PAEM**, the **Pan-Arab ARC** is authorized to request audited accounting information of **PAEM Participants** and the governing institutions.

In the fulfillment and development of its objectives and capacities, the **Pan-Arab ARC** is responsible for:

- a) Recommending penalties in cases of non-compliance or breach of this **Arab Grid Code**;
- b) Reviewing and approving the facilities that make up the grid and international interconnections;
- c) Reviewing and recommending proposals for construction of new international interconnection facilities;
- d) Reviewing and recommending accounting principles for entities participating in the **PAEM**;
- e) Reviewing and advising on the budgets and tariffs for the **Sub-Regional Market Facilitator**;

- f) Reviewing and advising on transmission service charges for application to transactions in the **PAEM**;
- g) Convening the **Market Monitoring Group** to reside within the **Secretariat** to investigate and analyze situations of potential market power abuse;
- h) Preparing periodic regulation reports evaluating the status of **PAEM** development in meeting its objectives; and
- i) Approving changes to this **Arab Grid Code**.

14.4 PAEM Administration and Operation – The Sub-Regional Market Facilitator

The **Sub-Regional Market Facilitator** is the market operator entity of the **PAEM** created per the **GA**. The **Sub-Regional Market Facilitator** directs operation of the **PAEM** in accordance with the **GA** and the rules set out in the **PAEM** Agreement and this **Arab Grid Code**.

The **Sub-Regional Market Facilitator** is legally authorized to carry out all acts, contracts and other actions required to direct operation of the **PAEM**.

The **Sub-Regional Market Facilitator**, in conjunction with the national **TSOs**, is responsible for electricity scheduling, billing and settlement in the **PAEM** based on the principles of fairness, efficiency, safety and transparency. The **Sub-Regional Market Facilitator** is responsible for:

- a) Submitting procedures for **PAEM** operation to the **Arab TSOs Committee** and the **Pan-Arab ARC** for approval;
- b) Conducting **PAEM** operation and scheduling in conjunction with the national **TSOs** using economic criteria, seeking to maintain satisfactory levels of security, quality and reliability;
- c) Reviewing and verifying in conjunction with national **TSOs** the technical feasibility of bilateral contract transactions;
- d) Managing commercial transactions in the **PAEM**;
- e) Developing for review by the **Arab TSOs Committee** and subsequent approval by the **Pan-Arab ARC** an auction process for international interconnection capacity;
- f) Administering the approved auction process for international interconnection capacity;
- g) Developing in conjunction with **PAEM Participants**, the national **TSOs** and the **Arab TSOs Committee** the **Master Plan** setting out the indicative expansion plan for generation and transmission, including reserve margins;
- h) Coordinating **PAEM** operation with the national **TSOs**;
- i) Developing and publishing representative market prices reflecting marginal production costs in each **Member State** based on international fuel prices;
- j) Developing and publishing representative bilateral contracts for services that can be purchased and sold in the **PAEM**;
- k) Providing **PAEM Participants** access to the market database and methodologies used by the **Sub-Regional Market Facilitator**;
- l) Providing public access to non-confidential information in the market database; and
- m) Communicating the **Master Plan** to the **Pan-Arab ARC**, the national **TSOs**, **PAEM Participants** and the **Arab TSOs Committee** once it has been approved by the **Ministerial Council**.

14.5 The Arab TSOs Committee

The **Arab TSOs Committee** is created per the **GA** and is legally authorized to carry out all acts, contracts and other actions required to perform its responsibilities, including:

- a) encourage coordination and cooperation among national **TSOs**;
- b) promote market integration, reliability and security of supply, efficiency, and technical innovation;
- c) coordinate implementation of network plans;
- d) coordinate administration of network codes;
- e) prepare standards and procedures for review by the **Pan-Arab ARC**;
- f) prepare and submit to the **Pan-Arab ARC** for review the **Capacity Obligation** and the reserve sharing obligation based on minimum generation capacity reserve requirements to be carried by **Member States**;
- g) assess and make recommendations relating to the need for changes to the **Arab Grid Code**;
- h) review and approve changes to standards and other lower hierarchy documentation associated with the **Arab Grid Code**;
- i) research and development relating to reliability and security of supply issues;
- j) promote public acceptability of the **PAEM**; and
- k) participate in the development of energy policy.