



TRANSMISSION SYSTEM OPERATOR-CYPRUS

PROCEDURE FOR THE CONCLUSION OF A CONNECTION AGREEMENT BETWEEN TSOC AND AN APPLICANT (PRODUCER/CUSTOMER)¹

(In force as of 01/01/2013)

1. INTRODUCTION

The purpose of this procedure is to inform Applicants (prospective electrical power Producers or electrical power Consumers (Customers)) who want to connect their electrical facilities to the Transmission/Distribution System (**TDS**), about the relevant Transmission System Operator-Cyprus (**TSOC**) process, from the submission of the Connection Application up to the signing of the Connection Agreement and the Instruction to Execute the Works for the construction of the Connection. The final sections of this document summarise key requirements for the last stage of the Connection Process, with reference to the relevant documents for further details.

The terms used herein are set out in the Transmission and Distribution Rules (**TDR**) and/or the 'Wind Park Connection Agreement Template', which are available on the **TSOC**, website at <https://TSOC.org.cy/>.

In accordance with the **TDR**, the **TSOC** shall consider Applications for Connection to the Transmission/Distribution System (**TDS**) from Producers with a requested connection capacity greater than **8 MW** or Customers with a requested connection capacity greater than **12 MVA**. For connections of a lower capacity, the Applications shall be submitted to (and be examined by) the Distribution System Operator (**DSO**), ie. the Electricity Authority of Cyprus (**EAC**).

The procedure for concluding a Connection Agreement between **TSOC** and the Applicant (Producer/Customer) for the connection of their facilities to the **TDS** is described below.

2. SUBMISSION of CONNECTION APPLICATION

The Applicant completes and submits to **TSOC** the 'Application for Connection to the **TDS** and the relevant Questionnaire, both of which are available on the **TSOC** website. The

¹This document was translated from the original approved by **CERA**, Greek document. In case of any discrepancy the Greek document prevails.

application must be complete with the following documents and information as stated on the Connection Application form:

- (a) A full copy of the terms and conditions of the 'Power Station Construction Licence', issued by the Cyprus Energy Regulatory Authority (**CERA**) (valid only for Producers).
- (b) An official cadastral plan of the Department of Lands and Surveys, to a scale equal to or less than 1:5.000, indicating the following:
 - The location of the Applicant's facilities and equipment (e.g. wind turbines, etc.).
 - Access road from the nearest public road, as well as the connecting roads between their facilities.
 - The proposed location of the Producer's Installations Central Substation (**PICS**) or of the Consumer's Installations Central Substation (**CICS**), whichever is applicable, through which the connection to the **TDS** will be made.
- (c) A Single Line Diagram (SLD) of the medium and high voltage electrical equipment of the Applicant's facilities, including the **PICS/ CICS** equipment.
It is noted that the Applicant's electrical equipment (e.g. transformers, circuit breakers, batteries, etc.) shall comply with the Transmission System Owner's/Distribution System Owner's specifications for the respective equipment; these will be provided by **TSOC**.
- (d) Manufacturer Technical Specifications for the proposed equipment (e.g. wind turbine generators, generators, transformers, large motors [100HP or greater]).

3. RECEIPT OF APPLICATION AND NOTIFICATION OF CONNECTION AGREEMENT PROCEDURE

TSOC examines the documents and information submitted and, provided that the Applicant has duly completed the Connection Application and the Questionnaire and has attached all the necessary documents, sends a letter to the Applicant informing them of the following:

- (a) The official date of receipt of the Connection Application, as recorded in the **TSOC** Register of Applications.
- (b) That the Application will be further processed by **TSOC**, provided that the Applicant has informed **TSOC** in writing that:
 - (i). They would like **TSOC** to proceed with further processing of the Connection Application in order to prepare and issue Preliminary Connection Terms.
 - (ii). They will accept to pay **TSOC** an amount equal to 2% of the estimated Capital Cost of the Connection Works when receiving the Preliminary Connection Terms. The payment amount shall not exceed EUR 30,000.

The amount of 2% on the Capital Cost covers **TSOC's** administrative cost, is calculated on the basis of the estimated Capital Cost according to the Preliminary Connection Terms, and is paid in advance by the Applicant on

receipt of the Preliminary Connection Terms. This amount is non-refundable (refer to the 'Key Charging Policy Principles' document).

The **TSOC** furthermore provides the Applicant with a copy of the "Procedure for the Conclusion of a Connection Agreement" document (i.e. this document) and the "Key Charging Policy Principles" document, for their reference. These documents are also published on the **TSOC** website.

It is noted that if the Connection Application is not complete, **TSOC** shall inform the Applicant in writing that an official date of receipt will be recorded only after all the necessary documents are received. Subsequently, the procedure described above is followed. Furthermore it is noted that, should the Applicant not request the issuance of Preliminary Connection Terms within 24 months from the Date of receipt of the Application, the Application will be removed from the **TSOC** Register of Applications.

4. PROCESSING OF THE APPLICATION FOR THE ISSUANCE OF PRELIMINARY CONNECTION TERMS

Upon receipt of the Applicant's letter expressing their wish for their Connection Application to be further processed for the issuance of Preliminary Connection Terms, **TSOC** will conduct a preliminary study for the connection of the Applicant's facilities to the **TDS**. Preliminary Connection Terms will be issued on the basis of this study.

It is noted that during the process for issuing Preliminary Connection Terms, the impact of the Applicant's project on the safe and reliable operation of the Electrical System is examined. The Applicant shall be informed by **TSOC** if any negative impacts are identified. The Applicant may appeal to **CERA** to resolve any disputes, in accordance with the Legislation.

The Preliminary Connection Terms shall specify how the Applicant's facilities will be connected to the **TDS** and shall provide the approximate value of the Connection's Capital Cost, i.e. the cost of the Connection Works.

TSOC shall deliver the Preliminary Terms to the Applicant with a cover letter titled 'Delivery of Preliminary Terms', requesting the Applicant to either accept or reject these Terms within 30 days.

Upon the Applicant's acceptance of the Preliminary Terms, the procedure outlined in clause 5 is followed.

In addition to the acceptance of the Preliminary Connection Terms, the Applicant has the option to request that the necessary studies are conducted and that the process for obtaining the relevant permits and approvals required for the Connection is progressed. For this option, the Applicant shall submit the relevant **TSOC** form, through which they will be committing to pay in advance the relevant cost. In case the project is not implemented, this cost is not refundable.

It is noted that, if the Applicant does not accept the Preliminary Connection Terms, the Connection Application is removed from the **TSOC** Register of Applications. For the case to be re-examined, a new Connection Application must be submitted to **TSOC**.

5. SUBMISSION OF APPLICANT'S TECHNICAL STANDARDS AND STUDIES

After the acceptance of the Preliminary Terms, the Applicant must submit the following to **TSOC**:

- (a) Certificates of conformance of their equipment and facilities with the applicable international standards (such as standards for power quality, electromagnetic compatibility, etc.) in accordance with the **TDR** in force.
- (b) Grid Compliance Study demonstrating compliance of the Applicant's proposed facilities with the requirements of the **TDR** in force.
- (c) A complete model of the Applicant's electrical system in DigSILENT PowerFactory® format, in accordance with the **TDR** in force.
- (d) Producer's Installation Central Substation (**PICS**)/ Consumer's Installation Central Substation (**CICS**) Spatial Plan.

The procedure will then be followed as described below, provided that the submitted information, as verified through **TSOC**'s evaluation, is complete and compliant with the requirements of the Transmission/Distribution Rules in force.

6. ADDITIONAL DOCUMENTS REQUIRED FOR THE ISSUANCE OF THE OFFER AND TERMS FOR CONNECTION

TSOC will proceed with the studies required for the issuance of the Offer and Terms for Connection, provided that the Applicant has submitted the following documents, in addition to those listed in clause 5:

- Full copy of the terms and conditions of the Town Planning Permission and Building Permit (where applicable) for their Power Station/Facilities.
- Proof of possession (Title Deeds)/long-term lease of the plots and/or premises where the proposed project will be constructed.
- Full copy of the **CERA** Operation and Production Licence terms and conditions (only applicable for power stations).
- In the case of a Renewable Energy Sources (**RES**) Producer, the following evidence shall be included:
 - (i). Proof that the **EAC** will purchase the electrical energy generated by the Applicant.
 - (ii). Confirmation from the RES and Energy Conservation Fund of the Energy Service of the Ministry of Energy Commerce and Industry that in principle, the Applicant's Power Station will receive funding under the relevant Support Schemes for the electrical energy produced.

In case the Applicant wishes to be enrolled in the Competitive Electricity Market in accordance with decision (b) of the **CERA** Memorandum dated 23/10/2012

regarding **RES** promotion measures, evidence (i) and (ii) above are replaced with a relevant confirmation, in writing, by the Applicant to the **TSOC**.

After submission of the above documents, the Applicant must submit a letter stating that they are fully prepared to receive the “Offer and Terms for Connection”. Additionally, if the establishment of an Interfacing Substation is required and the Applicant wishes to undertake its construction (Electrical Engineering Works and Civil Engineering Works), the Applicant must state in their letter the details of the Supervising Electrical Engineer for examination and approval by **TSOC**, in accordance with the provisions of Part C of the “Key Charging Policy Principles”.

It is understood that the above Licences, as well as all other licences required by Law and all documents, data, studies and certificates submitted to **TSOC** (e.g. Power Station data, generator and electrical equipment model and power rating, technical studies, cadastral information, etc.) shall be valid at the time of issuance of the “Offer and Terms for Connection”.

7. ISSUANCE OF THE OFFER AND TERMS OF CONNECTION AND THE CONNECTION AGREEMENT

Provided that all the documents required in clause 6 have been submitted, **TSOC** will proceed with the final Techno-economical Study and will issue the “Offer and Terms for Connection”, giving the Applicant a period of forty-five days to either accept or reject the offer. If the “Offer and Terms for Connection” are accepted in writing by the Applicant, **TSOC** shall, without delay, proceed with the issuance of the “Connection Agreement”, based on the framework and content of the “Offer and Terms for Connection”.

A “Connection Agreement” sample is available on the **TSOC** website.

The “Connection Agreement” is signed by **TSOC** and the Applicant. Upon signing the Agreement, the Applicant shall provide **TSOC** an advance payment against the Capital Cost of the Connection, in accordance with the terms of the “Connection Agreement”.

After the lapse of the time limit for acceptance/rejection of the “Offer and Terms for Connection”, the “Offer and Terms for Connection” will no longer be valid. Thereafter, if the Applicant wants their Connection to be reconsidered, a new Connection Application must be submitted and the process described in this document must be followed from the beginning.

8. APPLICANT’S FINANCIAL OBLIGATIONS

With regard to the Applicant’s Financial Obligations and the methodology for the calculation of the Capital Cost for the Connection, full details are provided in Part D of the **TSOC** document titled “Key Charging Policy Principles”, which is published on the **TSOC** website.

9. INSTRUCTION TO THE TRANSMISSION SYSTEM OWNER/DISTRIBUTION SYSTEM OWNER FOR THE EXECUTION OF THE WORKS

Once the Connection Agreement has been signed and the Applicant has provided to **TSOC** the advance payment and the bank guarantee in accordance with the terms of the Connection Agreement, **TSOC** will instruct the Transmission and Distribution System Owner (i.e. the **EAC**), in writing, to proceed with the engineering studies and the execution of the Works for the Connection of the Applicant's Facilities to the **TDS**, in accordance with the terms of the Connection Agreement.

The construction of the Connection Works will commence once the necessary studies have been completed by the Transmission System Owner/Distribution System Owner, as described below, and all the necessary permits and approvals for the Connection have been secured.

Depending on the Connection particulars, such studies, permits and approvals may include all or part of the following:

- Lease/purchase of land for the **EAC** substation
- Detailed design of the **EAC** substation
- Transmission and/or distribution line surveying
- Transmission line and/or substation environmental study
- Transmission line and/or substation Town Planning Permission
- Substation building permit
- Government approvals
- Transit permits through private land for transmission lines

Because the above procedures, particularly the securing of permits, usually take a long period of time, the Applicant may request for these to be progressed upon acceptance of the Preliminary Connection Terms, as described in clause 4 above, in order to accelerate the execution of the Works.

10. CONNECTING TO THE TRANSMISSION/DISTRIBUTION SYSTEM

Following the construction of the Applicant's facilities and of the works for the Connection (Connection Line and/or Interfacing Substation), the procedure summarised below is followed for the connection of these facilities to the **TDS**, in accordance with applicable Law and the Transmission and Distribution Rules.

Consequently, the Applicant is encouraged to study this procedure, which is described in detail in the **TSOC** manual titled "Terms and Conditions for the Connection of Independent **RES** Producer Facilities to the Transmission/Distribution System". This manual is published on the **TSOC** website and, although it was created for **RES** Producers, most of the provisions and requirements mentioned therein are also applicable to conventional Power Stations.

These procedures also include the appointment/adoption/obtaining/performance of the following:

- (a) Performance of the Commissioning Tests in accordance with the provisions of the Transmission and Distribution Rules. These tests are carried out in the presence of an authorised representative of the **TSOC/ DSO** at the Applicant's premises (**PICS/ CICS**).
- (b) The Applicant shall obtain a Certificate of Inspection of his Electrical Installations, a Certificate of Protection and Grounding and a Certificate of Electromagnetic Compatibility (EMC), in accordance with the provisions of the **TDR**.
- (c) The Applicant shall appoint a Security Coordinator/Control Officer and prepare Local Security Regulations that will apply to the Area of Responsibility for their facilities. The Security Coordinator/Control Officer shall possess the relevant Authorisation Certificate, which can be obtained under the relevant procedure. These are essential requirements of Chapter T12 of the **TDR**.

The above must be completed before energisation of the Applicant's facilities.

(d) The systems, equipment and signals to be included (e.g. energy meters, power quality and disturbance recorder, SCADA signals) are described in detail in the aforementioned Manual. These are summarised below:

i. Energy meters

The Distribution System Owner/Transmission System Owner will install two energy meters (main meter and check meter) for the commercial measurement and recording of electrical energy flow to and/or from the Applicant's premises.

In the case of Conventional Generating Units, the Producer shall install additional meters in accordance with the terms of the Connection Agreement.

The Applicant shall provide a suitable telecommunication link to enable the periodic remote reading of these meters by **TSOC**.

The metering installations shall comply with the requirements of Chapter T13 of the **TDR**.

ii. Power Quality and Disturbance Recorder.

This system shall record the Power Quality and/or the various disturbances at the Point of Connection (PC) so as to facilitate evaluation of compliance of the operation of the Applicant's facilities with the requirements of the **TDR**.

This recorder shall be supplied by the Applicant to the specifications that will be provided by **TSOC**, and will be connected to the **TSOC** Offices for remote data reading. Telecommunication arrangements and the installation of appropriate equipment shall be the responsibility of the Applicant.

iii. SCADA system signal transmission equipment.

These relate to the communication of the Applicant's **PICS/CICS** and the Interfacing Substation with the National Energy Control Centre (NECC) of the **TSOC** located in Nicosia for remote monitoring and control, through the exchange of analogue and digital signals for telemetry, tele-indications and remote command execution.

The Applicant shall install suitable terminal equipment for the exchange of SCADA signals with the NECC. The permanent telecommunications link between the NECC and the Applicant's premises shall be arranged by the Applicant on the basis of the **TSOC** specifications. The communication link fees shall be borne by the Applicant.

It is emphasised that cooperation between the Applicant and **TSOC** at the very early stage of the relevant study is required for the selection of the communication link type and protocol.

The above are just some of the important issues regarding the connection of the Applicant's facilities with the Transmission/Distribution System. For full details, the Applicant is referred to the aforementioned Manual and the Transmission and Distribution Rules.

11. DATE OF ENTRY INTO OPERATION

The Applicant will be notified of the time and date of completion of Commissioning Tests on the equipment connected to the **TDS**, upon their completion to **TSOC's** satisfaction. This shall be the Connection Date, which is the date of energisation of the **PICS/ CICS** and the Interfacing Substation.

This is followed by further Tests, such as System Tests and Operation Tests to verify compliance of the Applicant's facilities with the provisions of the **TDR**. These include, for example, Active and Reactive Power Setpoint Control tests etc. with regard to **RES** Producer facilities, in accordance with the provisions of Chapter T16 of the **TDR**.

Upon completion of these tests to **TSOC's** satisfaction, the date of entry into operation of the Applicant's facilities is set by **TSOC** and notified to all interested parties.

For detailed information regarding the procedures followed after the signing of the Connection Agreement and during the operation of the power generation facilities of Independent Producers, Applicants are referred to the Manual titled "Terms and Conditions for the Connection of Independent RES Producer Facilities to the Transmission/Distribution System" and to the **TDR**.

As already stated, this manual is available on the **TSOC** website. Although this was prepared for **RES** Producers, most of the chapters in the Manual are also applicable to conventional Producers as well as Customers.

Relevant Documents/Manuals/Forms

1. Transmission and Distribution Rules
2. Wind Park Connection Agreement Template
3. Procedure for the conclusion of a Connection Agreement between **TSOC** and an Applicant (Producer or Customer)
4. Key Charging Policy Principles
5. Terms and Conditions for the Connection of Independent **RES** Producer Facilities to the Transmission/Distribution System
6. Connection Application
7. Questionnaire (to accompany the Connection Application)

**Transmission System Operator Cyprus
January 2021**