TRANSCO
شركة أبوظبي للنقل و التحكم
Abu Dhabi Transmission & Despatch Company

Statement of Connection Charging Methodology

Effective from 1 January 2021

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1. Glossary

In this document, the expressions and terms stated below are defined for the sole purpose of supporting the readers' understanding of the document. Should a dispute arise as to the precise definition that may be attributed to a specific term, then the definition as may exist in the relevant Law or Licence or Transmission Code shall prevail.

Annual Connection Charges	The annual charge levied for the connection of Customer installation to the transmission system.
Applicant	A person applying for a new connection to the either the water or electricity transmission networks.
Application Fee	The fee payable by an Applicant or a Customer prior to TRANSCO undertaking any work needed in respect to provision of a Connection Offer.
Bussing Point	A site with transmission assets where a connection to more than one other transmission substation or switching station is deemed to be provided.
Charging Date	The date on which Connection Charges become payable.
Charging Period	A period equivalent to the Depreciation Period. This period commences at the date of energisation and concludes at the end in the same year as the last year of depreciation.
Charging Year	A period of 12 months as notified by TRANSCO 3 months prior to the start of any charging year. The charging year will normally commence 1 January and end 31 December.
Commissioned	Plant and/or apparatus certified by an independent engineer or TRANSCO engineer as having been commissioned in accordance with the relevant Commissioning Programme.
Commissioning Programme	The sequence of operations and or tests necessary to connect the Connection Asset to the transmission system for the purpose of making the connection available for operation.
Connection, and Interface Agreement	An agreement between TRANSCO and a Customer, issued pursuant to Condition 14 of the Licence.
Construction Agreement	An agreement which governs the undertaking of any construction works required as a result of a new connection request or existing connection modification.
Contestable Assets	Transmission assets agreed by TRANSCO as procured and/or installed by an Applicant and transferred into TRANSCO ownership.
Contestable Works Offer	An offer made by TRANSCO to undertake works for an Applicant in respect to Contestable Assets.
Connection Conditions Chapter	A chapter within the Transmission Code which specifies both the minimum technical, design and operational criteria that must be complied with by any Applicant seeking connection or Customer connected with the Transmission System and the minimum technical, design and operational criteria with which TRANSCO shall comply in relation to the part of the Transmission System at the Connection Site.
Connection Application	An application for a new connection to the TRANSCO transmission system.

Connection Assets	Plant and/or apparatus owned by TRANSCO required to connect the assets owned by an Applicant to the transmission system. A Connection Asset will in general have the sole purpose of providing connection to a Customer.
Connection Charge	The charge payable to TRANSCO by a Customer in respect of Connection Assets.
Indicative Connection Offer	A non-binding offer to connect which shall provide detail sufficient to permit an Applicant or Customer to understand the likely technical arrangement, cost of connection and predicted energisation date.
Connection Point	The physical point as defined in the Connection and Interface Agreement, where assets carrying electrical energy or water change ownership from TRANSCO to a Customer.
Connection Site	A TRANSCO Site or Customer Site as defined in the Electricity/Water Transmission Code.
Contestable	An activity undertaken by an Applicant in respect to procurement and/or installation of Connection Assets.
Consents	In relation to any works, permission of any kind from any relevant authority as shall be necessary for the Works.
Consumer Price Index	The Consumer Price Index of the United Arab Emirates (UAE) as published in the Economic Report issued annually by the Federal Competitiveness and Statistics Authority or its successor entity, or if such a report is discontinued, an equivalent official publication of the UAE government, as the DOE shall specify from time to time.
Customer	A person engaging with TRANSCO in respect to an existing connection to the water or electricity transmission network.
Demand	Electricity or water metered at the exit point from the transmission network in either MW of m3/h.
Demand Supply Point	A point of delivery from the transmission system to a distribution system or Non-Embedded Customer
Department of Energy (DoE)	The Department of Energy as defined in Law No. 11 (2018) to undertake regulatory and supervisory duties pertaining to the water, wastewater and electricity sector.
Depreciation Period	A period which commences at the effective Charging Date, and which concludes after a set period determined by TRANSCO, as per Section 12.1.4.
DISCO	A holder of a distribution license issued by the Department of Energy.
Disconnect or Disconnection	As defined in the Electricity Transmission Code, as defined in the Licence.
Distribution Voltage	A voltage of less than 132kV.
Electricity Security Standard	The TRANSCO Electricity Transmission System Security Standard, as per Condition 19 of the Licence and approved by the DoE.
Electricity Transmission System	The system consisting (wholly or mainly) of electrical transmission lines, equipment and cables owned and/or operated by TRANSCO and used for the transmission of electricity from one generating station to a sub-station or between substations and includes any plant owned or operated by TRANSCO in connection with the transmission of electricity.

Engineering Charges	The charges levied which recover efficient costs incurred directly by TRANSCO, or an appointed external service provider, for carrying out works deemed necessary to ensure compliance with its Licence in respect to provision and energisation of a connection to the transmission network.
Final Sums	The total cost incurred by TRANSCO as charged by a third-party undertaking construction of an entry or exit point, as specified in the Construction Agreement.
Financial Year	The period of 12 months starting on 1 January and ending on 31 December in each calendar year.
Firm Connection Offer	An offer made by TRANSCO to permit connection of assets owned by an Applicant to the electricity and water transmission system.
Generator	An entity authorised to generate electricity under a Licence or an exemption pursuant to the Law.
Gross Asset Value (GAV)	The initial value prior to any adjustment for depreciation.
Infrastructure Assets	Assets in the transmission system owned by TRANSCO, other than Connection Assets, which are used to provide transmission services from point of production or generation up to the Connection Point but excluding assets defined in the Connection Offer and detailed in the Connection and Interface Agreement.
Indicative Connection Offer	An initial estimate of the cost and likely energisation date based on high-level assessment undertaken by TRANSCO based on initial data and preliminary discussion with the Applicant.
Inspection and Adoption Charges	Charges made by TRANSCO to support the transfer of ownership from an Applicant to TRANSCO of assets installed under a Contestable Works arrangement.
Law	Law No. 2 (1998) as amended by Law No. 19 (2007) and Law No. 11 (2018) concerning the regulation of the Water and Electricity Sector in the Emirate of Abu Dhabi and Law No. 11 (2018) concerning the establishment of the Department of Energy (as amended from time to time).
Licence	The Licence, as may be amended from time to time, issued to TRANSCO by the DoE authorising TRANSCO to undertake transmission of electricity and water in the Emirate of Abu Dhabi, as modified from time to time.
Licence Standards	Standards that are prepared in accordance with Condition 19 of the Licence which directs TRANSCO to plan, develop, operate and maintain its transmission systems.
Liquidated Damages	Sums specified in the Construction Agreement that may fall to be due to be paid by TRANSCO should they fail to meet an agreed condition or set of conditions.
Minimum Cost Scheme	The cost of a connection arrangement that would have been the most efficient/economic and sufficient to service an Applicant's actual Demand.
Modification	Any actual or proposed replacement, renovation, modification, alteration or construction, by or on behalf of TRANSCO or a Customer, to either that Customer's plant or apparatus or the manner of its operation that has, or may have, a material effect on another Customer.
Modification Application	An application issued by TRANSCO or the Customer in respect to any actual or proposed replacement, renovation, modification, alteration, or construction by or on behalf of TRANSCO or a Customer to either that party's plant or apparatus or the manner of its operation which has or may have a material effect on another party at a particular Connection Site.

Modified Connection Offer	An offer made by TRANSCO which enables assets to be procured and or installed by an Applicant or Customer.
Non-Embedded Customer	A Customer, except for a distribution company, receiving electrical energy or potable water on a permanent or intermittent basis directly from the transmission system.
Net Asset Value (NAV)	The initial value post any adjustment for depreciation.
Operational Boundary	A physical point at a Connection Site agreed between TRANSCO and a Customer where responsibility for control and operation of the assets either upstream or downstream from that point changes.
Ownership Boundary	A Connection Point either upstream or downstream where ownership of the transmission assets changes between TRANSCO and the Customer.
Producer	An entity which is authorised to generate electricity and/or desalinate water under a license or an exemption as issued or agreed by the DoE.
Partial Capital Contribution	A payment made by an Applicant towards the cost of a connection related to the Connection Assets.
Reasonable Charges	Reasonable cost reflective charges comparable to charges for similar services obtainable in the open market.
Regulatory Asset Value (RAV)	The value of asset procured, installed and energised by TRANSCO as agreed annually with the DoE.
Replacement Period	In relation to a TRANSCO asset, the period commencing after the last year of the Depreciation Period and is for connection charging purposes the year in which the TRANSCO asset will need to be replaced.
Return on Assets	The value agreed with the DoE at the time of a price control as being permissible for TRANSCO to recover.
Self-Supply Customer (SSC)	A customer who is generating or producing Electricity and/or Water at their site for the primary purpose of satisfying their own electricity and/or water demand.
Shared Assets	The assets which are necessary to provide connections to the User and are shared between Customers and/or TRANSCO.
Site Responsibility Schedule	A document contained within the Connection and Interface Agreement which delineates key responsibilities at a Connection Site.
Special Purpose Vehicle (SPV)	A legal entity created for a limited business acquisition or transaction.
Statement	The Statement of Connection Charge Methodology.
Temporary Connection	A connection to the transmission system that is of a duration less than 12 consecutive months.
Termination Charge	The fee payable to TRANSCO in the event of a Customer terminating a connection prior to a date agreed in the Connection and Interface Agreement.
Termination Notice	A notice submitted to TRANSCO by a Customer seeking to terminate their connection to the transmission network.
TRANSCO	The Abu Dhabi Transmission and Despatch Company.

Transmission Code	A document prepared by TRANSCO in accordance with Condition 3 of the Transmission Licence setting out the technical parameters for the operation and use of the transmission system and of plant and apparatus connected to the transmission system.
Transfer Date	The date on which a connection asset is energised.
Transmission Entry Point	A Connection Point between the electricity or water transmission networks and a person seeking to generate electrical energy or produce potable water. The specific point of entry it being defined in the Connection and Interface Agreement.
Transmission Exit Point	A Connection Point between the electricity or water transmission networks and the network of a person seeking to consume electrical energy or water. The specific point of exit being defined in the Connection and Interface Agreement.
Transmission Voltage	Voltages of 132kV, 220kV and 400kV.
Use of System Agreement	An agreement between TRANSCO and a licensed distribution operator relating to use of the transmission system.
Use of System Charges	The charges levied by TRANSCO for use of the transmission system.
Preliminary Water Planning Data	Water demand data relating to a Customer development at the time the Customer applies for a Connection Agreement but before an offer is made and accepted.
Water Security Standard	A coordinated set of criteria and methodologies which Licensees shall use in the planning and development of their water transmission systems.
Water Supply Regulations	Regulations issued by the DoE under Article 62 of the Law.
Water Transmission System	The system of Water Trunk Mains, pumping stations and associated potable water plants which constitutes the water transmission system operated by TRANSCO.
Water Trunk Mains	Water pipework used for the pressurised or gravity bulk transfer of potable water between a Water Producer and a DISCO.
Works	The provision of assets of sufficient capacity and type as needed, to permit the Applicant to be connected to the transmission network and use the transmission network to the extent intended.

2. Introduction

In this Section, we introduce the basis upon which the Statement of Connection Charging has been developed. Reference is made to specific licence conditions that materially govern the preparation and scope of the statement. We have provided an outline of the review process which underpins the Statement and the contractual relationship between TRANSCO and those seeking to connect or those already connected. It is not intended in this Statement to go into detail on matters referenced in the Connection and Interface Agreement. Copies of all documents referenced in this statement are available for download from the TRANSCO Website: www.transco.ae.

The Statement presents the methodology that Abu Dhabi Transmission and Despatch Company (TRANSCO) adopts in order to receive a Connection Application and provide a Connection Offer for new or modified connection to either the Water Transmission System or the Electricity Transmission System. The statement is released under the conditions set out in our Licence as issued by the Department of Energy (DoE).

All documents necessary to apply for a connection to the transmission system or modification of an existing connection, are available for download from the TRANSCO website: www.transco.ae

2.1 Transco Licence Obligations

There is nothing in this statement which seeks to modify any obligation set to TRANSCO in Law or through its Licence. As such, wording and intent with the relevant Laws and Licence shall always define our obligations. We have presented in this section extracts from the Licence that we feel are useful to contextualise the role and responsibilities of TRANSCO in respect to connection to the transmission networks. The wording used is in the main based on that in our Licence, although we have for ease of reading only presented an abridged extract.

As the holder of the Licence in the Emirate of Abu Dhabi, TRANSCO is required by Law No. 2 (1998), to develop and maintain an efficient, coordinated and economical system of Electricity and Water Transmission and not to discriminate against any party connecting or seeking connection to the transmission system.

As part of Licence Condition 15 (Paragraph 1), TRANSCO is required to prepare statements in a form approved by the DoE setting out the basis upon which the charges for use of the system and for connection to the transmission system.

In accordance with Paragraph 3 of Licence Condition 15, the methodology in respect of connection to the Licensee's relevant transmission system includes:

a. a schedule listing those items of significant cost liable to be required for the purpose of connection,
b. the methods by which and the principles on which:
    i. any charges will be made in respect of extension or reinforcement transmission system rendered Connection Charges will be made;
    ii. charges (including any capitalised charge) will be made for maintenance and repair;
    iii. any charges will be made for disconnection;
c. charges of the types referred to shall be calculated Paragraph 4 of Licence Condition 15 states.

Connection Charges for those assets required to permit and or facilitate connection shall be set at a level which will enable the Licensee to recover:

a. the appropriate proportion of the costs directly or indirectly incurred in carrying out any works, and installation, maintenance and repair or (as the case may be) removal following disconnection of any pipelines, electric lines, other plant or meters (as appropriate); and
b. a reasonable rate of return on the capital represented by such costs.

TRANSCO is also required by the Transmission Licence:

a. to offer terms for connection to and use of its system or for the modification of an existing connection within 3 months of application;
b. to offer terms for use of system only within 1 month of application;
c. not to discriminate between any persons or class or classes of persons in providing use of system or in carrying out works for connection.

2.2 Review Process

The Licence states that TRANSCO must always keep the Connection Charging Methodology under review for the purpose of ensuring that the information set out in the statement continues to be true, accurate and correct in all material respects. Modifications to the Connection Charging Methodology will be subject to a consultation with Customers, unless it has been agreed otherwise with the DoE.

To become effective, a modification to the Connection Charging Methodology will require the approval of the DoE.

Once a modification is made TRANSCO will issue a revised statement. The revised Statement of Connection Charging Methodology will supersede all previous statements from the date of its issue and approval. Any application for a new connection or modification of an existing connection will continue to be treated under the statement that was current at the time of an application, unless otherwise agreed by both parties that the new statement will be adopted in full.

2.3 The Contractual Framework

The Connection and Interface Agreement sets out the terms and conditions applicable for use of and/or connection to the transmission system. In particular, the agreement sets out the Customer's obligations to:

a. pay all Use of System and Connection Charges,
b. comply with the provisions of the Electricity Transmission Code or Water Transmission Code.

Additionally, each Connection and Interface Agreement details the information on which the Customer's Connection Charges shall be based, this includes:

a. details of the Connection Assets by description, age and percentage allocation to the Customer,
b. basis upon which the Connection Charge will be derived based on the relevant statement of charging current at the time the Connection and Interface Agreement is developed.

If a Customer fails to fulfil their obligations, their right to use and/or be connected to the transmission system will cease. The Customer will be liable for all charges incurred to the end of the current Financial Year and for settling the Termination Charge.

A Customer may be required to enter into a Construction Agreement when they apply for a new connection to the system or modify an existing connection. Such a requirement is dependent upon the work to be undertaken by the Applicant or Customer and TRANSCO. Within the Construction Agreement, there will be provisions for site specific elements such as Consents and final sums. The Customer may request TRANSCO to consider including Liquidated Damages in the Construction Agreement where it is practicable for TRANSCO to do so. Such conditions that will influence TRANSCO's ability to agree includes; certainty over the works programme, availability of firm approvals and secured network outages.

All connections shall comply with the relevant regulations. It is the responsibility of the Applicant to ensure that they understand the relevant obligations to which they will be expected to adhere. TRANSCO shall be under no obligation to energise the connection if TRANSCO considers the Applicant has not ensured that they are able to fully and continuously, during the Charging Period for a Connection Point, meet their obligations.

3. General Principles

The Statement has been developed based on a set of guiding principles which seek to ensure TRANSCO engages with all Applicants and Customers in a consistent fair and transparent manner. The key principles are outlined in the following Section. Subsequent sections provide greater detail on specific treatment of certain items of cost and responsibilities set to TRANSCO and both Applicants and Customers.

Connection Charges enable TRANSCO to recover, with a reasonable rate of return, the appropriate proportion of the costs directly or indirectly incurred in carrying out any works, and installation, maintenance and repair or (as the case may be) removal following disconnection.

TRANSCO shall, in seeking to apply a Connection Charge, reflect in full certain parameters as agreed with the DoE as part of a price control review process. This will include Return on Assets, depreciation and operation repair and maintenance charge. A Connection Charge relates to the costs of assets installed for use by a Customer or a specified group of Customers.

TRANSCO shall in submitting a cost for connection to any Applicant, use reasonable endeavours to accurately estimate an indicative cost and ensure that external costs incurred by TRANSCO are based on services procured under competitive tenders and efficiently procured. Where TRANSCO is being requested to provide a connection cost based on a feasibility assessment then connection costs shall be based on recent costs incurred by TRANSCO.

The principles adopted in this Statement are based on discussion with the DoE as to the structure and content of the Statement prior to approval and application from 1 January 2018. We have also incorporated comments received from Customers during the latest review consultation exercise. Where necessary, certain changes have been proposed by TRANSCO during the review. This revised Statement is therefore based on both the previously agreed principles and subsequently agreed additions or amendments thereto. Where this revised Statement is at variance with current approved charging practice in respect to either a declared Connection Point or a new application already within the connection process and being processed under an agreed Connection Offer, then the previous basis of connection and charging as set out in the Statement applicable at the date of the Connection Offer shall continue to apply, provided TRANSCO in so doing remains compliant with its regulatory obligations under the Law.

A Connection Charge will be levied on all Connection Assets due either to a future or existing Customer seeking a new or modified connection. Liability for such a payment shall be the date by which the DoE approves the relevant Statement. All TRANSCO assets built to support a new or modified connection to the transmission system will be charged to the licensed Supplier or Purchaser of energy through the Transmission Use of System Charges mechanism. The Connection Charge will be charged to a licensed operator or Non-Embedded Customer consistent with the intent of the Transmission Codes.

Applicants, Customers and TRANSCO shall comply with the conditions set out in the relevant Transmission Code. In particular; the Connection Conditions Chapter of each Transmission Code. The Connection Conditions specifies both the minimum technical, design and operational criteria which must be complied with by any Customer connected to or Applicant seeking connection with the transmission system. The Connection Conditions specify the minimum technical, design and operational criteria with which TRANSCO shall comply in relation to the part of the transmission system at the Connection Site with a Customer.

A general definition between a Connection Asset and Infrastructure Asset is presented in this Statement. Differences between Connection Sites means that the exact boundary will need to be agreed and detailed in both the Connection Offer and Connection Agreement. Where an asset is defined as being a Connection Asset, the same will be included in a Connection Charge and charged by TRANSCO to the Customer. Any asset that is part of an overall scheme necessary to provide a connection, but not defined as Connection Asset, will be considered an Infrastructure Asset. The cost of Infrastructure Assets is recovered through the Transmission Use of System infrastructure related charge component of the overall charging mechanism.

The cost of any major or minor work on the TRANSCO transmission system that is providing benefit to multiple Customers or users of the transmission system, such as is the case of transmission system reinforcement, will be recovered by TRANSCO through the Transmission Use of System infrastructure charge. Where Customers share a Connection Site and hence have shared Connection Assets, then each Customer shall be liable to pay a proportion of the shared Connection Assets. In the case of an electricity connection, this will be based on the number of bays set out in the relevant Connection and Interface Agreement. All Customers shall be liable in full for assets deemed to be provided for their sole use.

4. Connection Application Process

In order to ensure that we provide a Connection Offer that meets the needs of an Applicant we have developed several Connection Application Forms. This section presents the overall Connection Application process and charges levied by us for providing a Connection Offer. The charging for a Connection Application ensures that we do not unduly discriminate between Customers and users by ensuring those needing a connection pay all the costs associated with a connection and that this cost is not paid by others.

4.1 Connection Applications

TRANSCO has provided several Connection Application templates which will need to be completed in full by the Applicant prior to TRANSCO considering a formal connection application as having been made. The Connection Applications for different types of customers are referenced below in Table 1: Types of Connection Applications.

We recognised that in some instances Applicants may not, at the time of application, be aware of all detail needed by TRANSCO. We have therefore developed a two-stage Connection Application and Offer process. This approach accommodates the possible absence of information at the initial stage (Stage 1) and need for clarification meetings prior to submission of a completed Connection Application Stage 2. Both Stage 1 and Stage 2 documents can be found in the relevant appendix to this Statement.

Table 1: Types of Connection Applications

TRANSCO Reference		Application Type	Description
Electricity:	PN03F01-G	Generator/Producer Application	To be used by Applicants which are intending to generate electricity and/or produce potable water and seek an entry point connection to the transmission network.
Water:	WN01F03-P		
Electricity:	PN03F01-D	DISCO Application	Intended to be used by Distribution Companies for exit points from the transmission network.
Water:	WN01F02-D		
Electricity:	PN03F01-NEC	NEC Application	To be used by large customers seeking direct connection to the transmission network. Such customers will be referred to as Non-Embedded Customers.
Water:	WN01F02-D		
Electricity:	PN03F01-SSC	SSC Application	Principally intended for use by Non-Embedded Customers that are to operate on-site electricity generation for self-supply purposes.
Water:	WN01F01-SSC		

4.2 Application Fee

In submitting an application for connection, the Applicant shall be required to either pay an application fee ahead of TRANSCO processing the Connection Application or provide a letter of indemnity to TRANSCO sufficient to cover all TRANSCO's liabilities related to the works needing to be undertaken in order to provide a Connection Offer. TRANSCO shall provide an Applicant with an estimate of costs likely to be incurred. The costs charged will be based on the actual work undertaken, which may be more than or less than TRANSCO's initial estimate.

The activities undertaken by TRANSCO in support of an Applicant and in preparation of a firm Connection Offer include the following types of works:

- Application receipting;
- Initial planning assessment;
- System studies of connection arrangements;

- Route and plot;
- Commercial assessment, and
- Applicant engagement.

In respect to the two-stage application process, the payment of an application fee or letter of indemnity will be at the same time the Applicant submits data as needed for Stage 2 assessment. Data submitted at the time of Stage 1 should be complete to the extent that TRANSCO is able to adequately determine works needed to provide a connection to the transmission network.

TRANSCO will not commence detailed work related to a new or modified connection offer, until all technical data as defined in this statement has been received in full.

The following conditions will apply to any Application:

a. if the development proceeds, TRANSCO will refund the total charge for the application, against Connection Charges payable by the Customer;
b. if an Applicant decides having, made an application for connection and following engagement with TRANSCO that they do not wish to proceed or are unable to provide full data as needed by TRANSCO, then TRANSCO will refund any money as may be due against the original Application Fee. It is expected that in such cases the level work undertaken by TRANSCO will be less than 20% of the work needed to process a full Connection Offer. Such initial work will include review of the submission and programming of the application assessment works in addition to a high-level desktop planning review.
c. where the decision by the Customer is to proceed and full details are provided, TRANSCO will prepare and tender a Connection Offer to the Applicant. The Application Fee will be deducted in full from the Connection Charge.
d. in cases where a signed agreement for a new or modification connection is subsequently changed at the Customer's request, before the Charging Date, the original application charge and any charge for the subsequent modification application(s) will be treated as set out above.
e. if change arises related to a Customer's connection need or timing thereof, after the application has been submitted, then TRANSCO will advise as to whether the change is likely to have a material impact on the planned Connection Offer. If the change is unlikely to have a material impact, then TRANSCO will proceed to make the Connection Offer on the terms as initially planned. If the change is likely to result in a material change, then the Customer has the choice of continuing with the application as originally submitted or withdrawing the application and submitting a new application. We define material change as a modification to an application that necessitates TRANSCO to undertake additional system studies and or route and plot enquiries.

Application fees are payable by each person seeking a new connection to, or modification of an existing connection to, the transmission system. The application fee payable in respect to a new and modified connection is presented in Table 2: Application Fees. The costs presented in Table 2: are only a percentage of the cost that will be incurred by TRANSCO in preparing a Connection Offer. TRANSCO will recover all outstanding costs not covered through the Application Fee once the Connection Offer is accepted.

Table 2: Application Fees (AED)

Application Type	Application Fee (AED)
New Application – Generation	200,000
New Application – Demand	150,000
Modification – Generation	100,000
Modification – Demand	75,000

4.3 Third Party Connection Application

In certain circumstances, it may be necessary for a third party to tender a Connection Application ahead of an application being made by what will be the substantive Applicant. In such a situation, the third party making the application will be required to indemnify TRANSCO for all cost as may be incurred by TRANSCO in progressing the Connection Application and Connection Offer, ahead of a substantive application. The indemnification will cover all costs up to the point where a substantive application is tendered. The substantive Applicant will be accountable for all TRANSCO's Connection Application and Connection Offer costs. The form of indemnification may be a payment of the Application Fee or an indemnity agreement. TRANSCO will decide on the level of indemnification needed and hence the need for an upfront fee or agreement.

Circumstances likely to give rise to such a situation may include:

- Development of a generator and/or production site by a consortium acting through a Special Purpose Vehicle (SPV), where the Customer will be the SPV with the initial application made by an existing entity within the energy sector.
- Development of a generator and/or production site by a consortium operating acting through a SPV, where the Customer may be an existing Customer, most likely of an NEC type.

4.4 Connection Application Process

Upon receiving a Connection Application, TRANSCO will review the detail provided. Any deficiencies in the data submission which will prevent TRANSCO from progressing the Connection Offer, will be communicated to the Applicant.

The submission will be considered by TRANSCO as a Stage 1 application. TRANSCO will engage with the Applicant to identify detail needed to develop a Connection Offer. Once all detail needed has been agreed and provided, the application will be classed as a Stage 2 application. TRANSCO will at the second stage of the application proceed to provide a Connection Offer. The Connection Offer will be provided within 3 months from the date all information agreed as sufficient has been received by TRANSCO.

Application fees are payable by each person seeking either a new connection to, or modified of an existing connection to, the transmission system. The application fee payable in respect to a new and modified connection is presented in Table 2 above.

The costs presented are only a percentage of the cost incurred by TRANSCO in preparing a Connection Offer. TRANSCO will recover all outstanding costs not covered through the Application Fee once the Connection Offer is accepted and the project commences. No engineering time included in the Application Fee will be recharged.

4.5 Optioneering Studies

If an Applicant wishes for TRANSCO to assess several connection options before formally applying, TRANSCO will carry out optioneering studies at their request. These studies will be charged at the rates set out in Table 3: Optioneering Study Fees, in addition any external costs as may be incurred will be notified to and agreed with the Applicant or Customer, prior to work being undertaken. Work carried out as part of an optioneering study may, where one such connection option is chosen by the Applicant to be the connection option submitted for a Connection Offer TRANSCO will review the work undertaken as part of the optioneering study and if appropriate reduce the Application Fee.

Table 3: Optioneering Study Fees (AED)

Application Type	Application Fee (AED)
New Application Generation (feasibility assessment purposed only)	25,000
New Application Demand (feasibility assessment purposed only)	15,000
Modification – Generation (feasibility assessment purposed only)	12,000
Modification – Demand (feasibility assessment purposed only)	7,000

4.6 Connection Studies

In all cases, TRANSCO shall either undertake a detailed study related to a firm connection request or review and approve the connection study independently carried out by an Applicant or Customer.

The study seeks to verify the connection is capable of being energised and remaining energised to TRANSCO's transmission system. The Applicant will be required to submit detail, as and when required by TRANSCO, in order to support the connection is eligible for energisation and is able to operate in compliance with obligations set out in the electricity or water Transmission Code.

TRANSCO shall ensure that it is satisfied that the connection will not adversely affect other Users of the transmission system or the security and stability of the transmission system. The Applicant shall be responsible for all costs incurred by TRANSCO in relation to any assessment that may need to be undertaken by TRANSCO either directly or indirectly. Where work is undertaken by others external to TRANSCO, the cost of such works shall be notified and agreed by the relevant Applicant, prior to it being incurred.

4.7 Conditions of Application

4.7.1 Justification for Connection

In making an application for connection, the Applicant shall be required to demonstrate, through submission of a comprehensive technical and business justification which clearly demonstrated that a transmission connection is an optimum solution and that all other options that may obviate, defer, or reduce the level of transmission investment associated with a connection have been fully considered. TRANSCO reserve the right to present such business justifications to the DoE and other stakeholders, as may be needed.

TRANSCO, in accepting the submission, will assume that the party submitting is sufficiently aware of the technical complexities of the connection application.

In the case of a Non-Embedded Customer seeking connection, they will be required to demonstrate that their Demand projections have been approved by relevant governmental bodies, such as; the Industrial Development Board and / or other licensed entities within the energy sector. Where TRANSCO considers such Demand projections to be in excess of expectation, or likely to be included in another Demand forecast, then TRANSCO reserves the right to seek confirmation of the same with such relevant governmental bodies or licensed entities. Until confirmation has been secured, TRANSCO reserves the right not to proceed with the Connection Application.

Where a relevant governmental body or licensed entity does not have mandate to approve, as may be the case in respect to a large speculative commercial development, then TRANSCO shall require the party wishing to connect to demonstrate that the Demand forecast, is reasonable.

Where in the opinion of TRANSCO the Applicant is considered not to have adequately justified the need for a connection or capacity or type of connection requested, then TRANSCO will advise the Applicant that justification is not proven and shall request the Applicant to review, resubmit or rescind. In returning the detail to the Applicant, the connection process shall be halted.

If the Applicant and TRANSCO cannot agree on the need for a transmission connection, then the Applicant has the right to refer the matter to the DoE for their consideration and/or determination. Once agreement or outcome from a determination exists, at that time TRANSCO shall proceed with the connection process.

4.7.2 Connection Application Submission

Any person seeking connection to the transmission system shall submit their completed application to TRANSCO at the following address:

Abu Dhabi Transmission and Despatch Company (TRANSCO)
P.O. Box 173
Abu Dhabi, UAE
T: +971 2 416 4000
E: connections@transco.ae

The submission should be marked for the attention of the Asset Management Director.

5. Connection Offer Process

This section provides an overview of the Connection Offer process. Certain considerations that may result in a Connection Offer having to be modified from the standard have been highlighted. Such considerations includes; one-off charges or conditions that may need to be included in the Connection Offer to ensure that TRANSCO's investment is efficient and that other Customers do not contribute to the provision of Connection or Infrastructure Assets provided principally to address the needs of another Customer.

5.1 Multi-stage Connection Offer

Prior to the release of a Connection Offer or Modification Offer, it is recognised that detailed engagement with the Applicant or Customer shall be required to ensure that any offer for connection or modification is able to address the needs of all those involved. In most cases, TRANSCO will be engaging with an Applicant as opposed to a Customer. The referencing below to Applicant is equally applicable to a Customer seeking a modification to an existing connection.

5.1.1 Stage 1 Indicative Connection Offer

The Connection Offer provided by TRANSCO in response to an application for connection, or modification request, shall in the first instance, be considered as an Indicative Connection Offer only and not a firm offer to connect.

The Indicative Offer shall be TRANSCO's initial estimate of the works likely to be required based on the Applicant's or Customer's connection application. The Indicative offer shall include enough detail to permit the Applicant or Customer to understand the technical arrangement, cost of connection and predicted energisation date. The Applicant or Customer and TRANSCO shall discuss specific detail presented in the offer prior to proceeding to the submission of a Connection Offer.

The estimate of the cost to connect will be provided to the Applicant based on the actual costs incurred by TRANSCO for similar connections.

5.1.2 Stage 2 Firm Connection Offer

Upon receipt of the Applicant's agreement to the Indicative Connection Offer, TRANSCO shall proceed to develop a Firm Connection Offer. The Firm Connection Offer will be based on an agreed technical arrangement at the Connection Point and Infrastructure Asset arrangement. The Applicant shall be advised as to the estimated cost of connection based on recent works undertaken for other relevant connections. That estimated cost shall form the basis upon which TRANSCO offer to provide a new connection or modification to an existing connection.

The final cost of connection shall be based on the actual costs incurred by TRANSCO and includes all internal activities and external works. TRANSCO shall provide an estimate of the internal costs likely to be incurred and shall provide the Applicant with detail of costs related to external works. The provision of external services including construction shall be awarded through TRANSCO's procurement policy and competitive bidding.

5.1.3 Stage 2 Transmission Investment Indemnity

Where the Applicant is not a subsidiary of TAQA, TRANSCO may require the Applicant to enter into an indemnity agreement with TRANSCO prior to TRANSCO progressing any activity related to the works detailed in the Connection Offer.

The form of the indemnity agreement will be shared with the Applicant as part of the Connection Offer. The phasing of payments made to TRANSCO shall be such that TRANSCO carries no investment risk related to any works associated with the transmission investment needed to support the provision of a connection to the network.

5.2 Connection Offer Timescales

TRANSCO shall, in seeking to provide an estimate for connection or a Firm Connection Offer, undertake to do so in the following timescale:

a. where an enquiry is received seeking an estimated cost of connection TRANSCO shall provide an estimate within 1 month of receipt of the enquiry and provision of all connection data. This will be considered by TRANSCO as Stage 1. Depending on the level of engagement between the Applicant and TRANSCO and complexities of the connection the elapsed time may take more than 1 month;
b. TRANSCO shall in response to a Connection Application provide to the Applicant a Connection Offer, within 3 months of the receipt of a valid/complete application as per the Application form. This will be considered by TRANSCO as Stage 2;
c. for the modification of an existing connection, a modification offer will be provided within three months from receipt of a valid application. A modification request shall be treated in the same manner as a new connection request in terms of a two-staged approach;
d. where TRANSCO is unable to progress a Connection Application or modification request due to the action or inaction of a party over which TRANSCO has no direct control, then the time to respond will be suspended. Once the action or inaction that occasioned a suspension of the time allowance has been resolved TRANSCO will recommence monitoring of the response time.

TRANSCO will respond within the above timescales through direct engagement with the Applicant or Customer in respect to Stage 1 and a Connection Offer in relation to Stage 2. The Connection Offer will contain technical information on the Connection Assets to be provided, together with an estimate of the likely capital and running costs of the proposed equipment to be provided.

5.3 Minimum Design Scheme

In determining the most economically efficient method of providing a connection, TRANSCO shall take into consideration data submitted, system configuration, operating parameters and overall cost.

TRANSCO will base its design and subsequent Connection Offer on a standard connection type and security of supply arrangement; Minimum Design Scheme. Additional requirements, or enhanced levels of security, may be requested by the Applicant. Such requests, will be accommodated where practicable by TRANSCO. All costs likely to be incurred, in providing a non-standard connection arrangement or a level of network security above that needed, will be recovered through either a modified Connection Charge or as a one-off charge, depending upon the request.

Where the Applicant and TRANSCO agree that a transmission connection is required, but that the type and capacity of the connection has not been justified by the Applicant, then TRANSCO shall request the Applicant to pay a capital contribution to the cost of the connection arrangement. The level of capital contribution will include the cost in excess of a connection deemed reasonable for the forecast Demand expected and associated network security arrangement.

The capital contribution, if requested, may include a contribution to Connection Assets, along with capitalised operation, repair and maintenance charges over the lifetime of the connection associated with assets deemed to be in excess of need. Where the Applicant and TRANSCO are unable to agree as to the type of connection considered appropriate or cost charged by TRANSCO, the Applicant shall refer the matter to the DoE for determination. Where feasible to do so works necessary to provide a connection which may be considered as 'no regrets' to either the Applicant or TRANSCO shall be progressed during the period of determination.

5.4 Managing Connection Risk

A connection offer, either inside or outside the Emirate of Abu Dhabi, will be presented to the Applicant for his acceptance prior to building the connection. This Offer will after taking into consideration the risk to TRANSCO of the Applicant's ability to make payment of the connection charge over the full term of the connection.

Accordingly, an offer will include a charging structure as per Section 11 or a security arrangement considered by TRANSCO appropriate to mitigate the risk faced. This 'security' arrangement, may include; (i) full cost capital contribution, and/or advanced payment of operation and maintenance charges or (ii) a financial security that is equal to the net present value (NPV) of future stream of payments related to both capital and operating expenses, as per Section 12.1 of Chapter 12 and discounted over the Depreciation Period of the relevant Connection Assets by a rate equal to Return on Assets.

5.5 Contestability in Delivery

If the Applicant requests an option to undertake provision and installation of certain Connection Assets, then a Modified Connection Offer will be provided. Greater detail as to the manner by which TRANSCO will address such a request is presented in Section 6.

5.6 Connection and Interface Agreement

In submitting the Connection Offer TRANSCO shall include a draft Connection and Interface Agreement. The agreement shall, amongst other matters, refer to the obligations set to TRANSCO and the Applicant to ensure compliance with all regulations and codes, as may be relevant to the connection and use of the transmission system. The agreement will include specific technical detail related to the connection arrangement and characteristics of the service provided.

The Connection and Interface Agreement presented at the time of the Connection Offer will by necessity be in draft form. Both TRANSCO and the Applicant shall prior to energisation, finalise and execute the agreement.

The Applicant shall ensure that they demonstrate to TRANSCO that they have agreed with a nominated supplier a Supply Agreement, or in the case of a Generator or Producer that a valid off-take contract is in place. TRANSCO will not energise or charge the connection or modification until all conditions precedents in the Connection and Interface Agreement have been met.

A copy of a standard Connection and Interface Agreement is available for download from the TRANSCO website: www.transco.ae.

5.6.1 Accepting the Connection Offer

TRANSCO shall not commence any works related to construction until all matters pertaining to the Connection Offer have been formally agreed including agreement to enter into a Connection and Interface Agreement in a form similar to that presented in draft. TRANSCO will consider entering into an indemnity agreement with the Applicant ahead of finalising the Connection Offer in order to expedite internal approvals and early placement of works orders.

The Applicant's acceptance of the Connection Offer shall be enough for TRANSCO to proceed with tendering for all external contracts. Prior to awarding a contract for construction of the connection arrangement TRANSCO shall inform the Applicant of the price bid for the construction works and work programme related to the Connection Assets. Agreement from the Applicant to proceed with award of the contact will be sought. No work will be undertaken by TRANSCO until receipt of the Applicant's confirmation of the construction contract price and energisation date.

6. Contestable Works

This section outlines how TRANSCO will accommodate a request to install all or part of the assets at a Connection Site. The reference to Applicant is equally applicable to a Customer seeking to modify an existing connection. Such a request is referred to as a Contestable activity.

The Applicant may request TRANSCO to identify those Connection Assets that may be procured and or installed by them. TRANSCO shall, upon receipt of such a request, provide to the Applicant the information requested accompanied with an outline of the stages involved in provision by TRANSCO of a Modified Connection Offer.

The information provided by TRANSCO will include conditions under which TRANSCO will accept into ownership the assets procured and installed by the Applicant. The Applicant shall be advised of the costs which will be incurred by the Applicant in respect to Inspection and Adoption Charges. TRANSCO will affirm the Connection Cost related to those Connection Assets that are Non-Contestable.

If requested, TRANSCO may provide to the Applicant a Contestable Works Offer.

Should an Applicant choose to procure and install the Connection Assets, the assets shall be constructed to TRANSCO approved standards and specifications and installed by an approved vendor as registered with the sector. All assets installed by a third party which are to be in TRANSCO's ownership shall be transferred at nil cost. The transfer of assets shall be affected through an Asset Transfer Agreement.

Where in the interest of efficient capital investment, TRANSCO deems that sole use assets may be required for another connectee at some future date, then TRANSCO shall agree with the Applicant that ownership of such sole use assets will be held by TRANSCO. Any asset that is be placed in an area of land which is accessible to the public shall be transferred into TRANSCO's ownership along with all land rights prior to energisation

7. Ownership, Commercial and Operational Boundary

Defining responsibilities for ownership control and operational boundaries provides the clarity needed for both the Connection Charges and Connection and Interface Agreement. Whilst each Connection Site will be individually assessed, there are nevertheless certain general assumptions that can be considered as likely to influence the setting of responsibilities and boundaries. We have presented in the appendices a responsibilities matrix of a form that would be expected to be included into a Connection and Interface Agreement.

All boundaries; Ownership, Operational and Commercial will be identified in the Connection Offer. The Ownership Boundary and Operational Boundary will be documented and presented in the Connection Interface Agreement and form part of the Operational Arrangement between TRANSCO and the Customer.

The boundary points identified shall take into consideration the optimum location at a Connection Site that permits TRANSCO and the Customer to identify a physical asset where ownership and/or operational responsibility will transfer between the parties. In most instances, the Commercial Boundary will align with that of the Ownership and Operational boundaries. TRANSCO shall normally own and operate all transmission assets regardless of their classification; Infrastructure or Connection Asset.

The ownership, operation and maintenance of the secondary assets; (protection, control, communications and water valves) will, in general, follow ownership of the primary assets; (overhead lines, cables, substations, water pumps, surge vessels and reservoirs). In respect to electricity assets, this includes all transformers as may be defined by International Electrotechnical Commission (IEC) standards as being of a medium-power classification.

Where a transmission asset is installed outside of a Customer's site, the asset shall be owned, maintained and operated by TRANSCO. All asset owned by TRANSCO shall also be operated and maintained by TRANSCO.

Where TRANSCO install Connection Assets, an element of which may be required to be operated as a transmission asset, then such an asset shall be classed as Shared and held by TRANSCO in terms of ownership and operation.

8. Connection and Infrastructure Assets

In this Section, we present a general definition as to what may be considered a Connection or Infrastructure Asset. The classification at each Connection Site will be decided upon by TRANSCO and detailed in the Connection Offer. The detail presented consists of several generalised single line diagrams presented so as to aid understanding.

8.1 Electricity Connection Specific

The definition of an asset to be classed as Connection or Infrastructure will be determined at the time of the Connection Offer. In most instances, the point at which an asset may be classed as Connection or Infrastructure shall take into consideration existing or future use of a connection arrangement.

Guidance as to how TRANSCO will allocate specific asset between Connection and Infrastructure is presented below:

- Assets that are provided, in part or full, for the benefit of a Customer shall be classed as 'Connection'.
- Where the substation is built for only one Customer irrespective of supply Demand or infeed, the whole substation cost will be allocated to that Customer.
- Where a site has more than one Customer connected, assets specific to that customer and those assets used in part by another customer will be classed as a 'Connection Asset'. Allocation of what are effectively shared Connection Assets will, for electricity, be allocated in the first instance based on allocated bays used by each the Customer. Where this is not possible, the allocation will be based on agreed connection capacity

Following the allocation of assets between Infrastructure or Connection, consideration will then be given as to the point of transition between the two classifications. This point of transition will normally be used to set the Ownership Boundary.

Although connection arrangements may differ between Applicants, it is nevertheless possible to take guidance from the operational experience related to existing connection arrangements. Possible transition points are listed below:

a. the point at which the overhead line conductors, from the terminal tower or junction tower(s), are fixed to the substation gantries of the outgoing feeder circuit at the first Transmission Voltage substation beyond the Ownership Boundary;
b. in the case of cabled circuit entries, the busbar side of the cable sealing end of the outgoing feeder circuit at the first Transmission Voltage substation beyond the Ownership Boundary or;
c. the transformer side clamp of the disconnector or earth switch on the first transmission voltage substation side of a TRANSCO owned transformer, where the outgoing feeder circuit of the first transmission voltage substation, incorporates a transformer whose lower voltage is also a transmission voltage.

To aid understanding, a set of generalised diagrams are provided in this Statement.

8.2 Water Connection Specific

Connection Assets are, in general, defined as all assets located between the point of connection and the Water Transmission System.

In the majority of cases, only one Customer will be connected at a Connection Site. Where more than one Customer is connected, the Connection Assets shall be apportioned based on a mix of; sole-use, where such assets are provided for the sole benefit of a Customer, and shared where the Connection Assets are to support the provision of a transmission service to all relevant Customers sharing a connection.

Sole-use assets will be allocated in full to a Customer. Shared Assets shall be allocated based on the capacity of the asset and capacity need of each Customer.

Specific arrangements include:

a. the Connection Point may be declared as the downstream flange of the GENCO/NEC gate valve;
b. in respect to a connection between TRANSCO and a DISCO, the point of connection will be declared as the downstream side of the first (isolation or control) valve located upstream of the flow meter. This point is in general agreement with the requirements of the Water Transmission Code;
c. a standard connection will be considered as being a connection to a TRANSCO reservoir. This arrangement will be requested where the Applicant's site is within the vicinity of an existing transmission main;
d. the Connection Assets in such an arrangement will include pipes, valves and fittings from the transmission reservoir to the point of connection;
e. in certain circumstances, the Connection Assets may include a pumping plant downstream of TRANSCO receiving point reservoirs, as may be required to meet the Applicant's water pressure requirement.
f. where the applicant requests a connection directly connected to the transmission main the Connection Assets shall be deemed to include pipes, valves and fittings from the nearest suitable transmission asset to the point of connection.

8.2.1 Allocation of Reservoirs at Connection Sites

In the case of a reservoir being installed at the Connection Site, in order to comply with the Water Transmission Code or Security Standard, the sizing of the reservoir will be in accordance with the following principles:

a. the water storage shall be equivalent to 24 hours supply at the average daily Demand of the distribution system;
b. all water storage facilities should have a minimum of two tanks, or one storage tank with minimum of two sections or more that can be isolated, at each location; and the volume of storage so calculated shall be usable and exclusive of any unusable top or bottom water storage.

8.2.2 Allocation of Pumping Station Assets at Connection Sites

All water pumps will be capable of supplying the output required by the despatch process at a continuous rate against the water head-pressure specified in the Connection Agreement.

To maintain supplies, in case of water pump failure or routine maintenance, TRANSCO will determine the necessary number of standby pumps based on a risk assessment in accordance with the guidelines given in the Security Standard.

8.2.3 Allocation of Standby Generator Assets at Connection Sites

Standby generators or uninterrupted power supply shall be provided at Connection Sites where no alternative power supply is available. The cost of providing such units shall be borne/absorbed by the Applicant along with all likely operating and maintenance costs, thereof.

8.2.4 Allocation of Metering and Communication Assets

It is the responsibility of a DISCO or GENCO to have in place the appropriate exit point or entry point metering. Such metering shall be a type required by the Metering Data Connection Code. Metering assets shall be considered as a Connection Asset however, the operation and maintenance shall be by DISCO or GENCO. TRANSCO shall provide all communication assets at the Connection Site sufficient to enable the retrieval of metering data and local control of the interface point, as well as, remote operation and control as deemed necessary by TRANSCO.

In case of Self-Supply Customers, it is the responsibility of DISCO/GENCO to provide the metering and the same shall be operated and maintained by DISCO/GENCO.

9. Single Connection Charge

There are certain situations in which TRANSCO will seek to charge a single Connection Charge. In this section we have identified the situations that may give rise to TRANSCO seeking a one-off payment. The listing provided should be read as a guide only.

9.1 Security of Supply

TRANSCO shall plan, design and operate transmission systems in accordance with the relevant codes and standards as approved by the regulator.

TRANSCO recognises that certain Applicants or Customers may require a standard of security that is greater than, or less than, the agreed standard. TRANSCO is willing to provide such a level of security provided the Applicant agrees, through the acceptance of the Connection Offer and Connection and Interface Agreement as to security of supply being afforded.

Where a level of security is requested and agreed by TRANSCO, the Connection Offer will detail the security level to be provided and consequence for restoration of supply in the event of an unplanned incident.

The capital cost of providing such a connection arrangement will be recovered through the Connection Charge. In circumstances where a level of security requested is in excess of that normally provided and as such warrants investment in excess of what would be required for a typical connection, then TRANSCO shall charge for such additional assets. TRANSCO will recover the additional investment either as a one-off payment charge or as a specific component in the Connection Charge. The cost of the planning, operation and maintenance of such addition assets will also be recovered either as a capitalised amount or ongoing charge.

9.2 Temporary Connections

Where TRANSCO is requested, through submission of a formal application, to provide a Temporary Connection, the request will be treated in accordance with the principles set out in this Statement. This will include payment in advance of any works that need to be undertaken to address system assessment and design. TRANSCO will provide the Applicant with an estimated cost of providing a Temporary Connection based on supply, installation and supervision of all assets as may be required to facilitate such a connection. The Applicant shall be charged the actual cost incurred by TRANSCO.

The cost to connect a Temporary Connection will also include an allowance for the likely costs to be incurred by TRANSCO in respect of disconnection, removal and refurbishment of the Temporary Connection assets. TRANSCO shall, following disconnection and removal, reimburse the Customer any monies related to asset reuse or scrap value, as may arise in the 12-month period following removal.

Prior to TRANSCO incurring any cost, related to such a connection, the Applicant shall pay in full an estimate related to the above activities.

Where a temporary connection is subsequently replaced by a permanent arrangement, TRANSCO will consider refunding of the Temporary Connection charge and recovering the same as an element of the annual Connection Charge.

9.3 Principles of Connection Reinforcement Charges

The TRANSCO agreement to connect an Applicant will provide access to an agreed level of connection capacity. Where the Customer Demand exceeds the agreed connection capacity, it is the responsibility of the Customer to submit an application to TRANSCO, as per the process set out in the Connection and Interface Agreement to request an increase in connection capacity.

Where a Connection Asset is uprated and where this uprating does not affect the Replacement Period, the Customer shall pay a one-off charge equal to both the direct and indirect costs of the works involved. Alternatively, TRANSCO may agree to amend the Connection Charge. In the case where a capital contribution is made by the Customer, the capital related components shall be adjusted. The cost related to operation and maintenance, where applicable, shall be calculated based on the Gross Asset Value of the new uprated Connection Asset. The Depreciation Period of the uprated asset shall equate to the remaining Charging Period.

9.4 Acceleration or Delay Costs

A change request from an Applicant which results in either acceleration or prolongation of a connection relative to the agreed energisation will be considered by TRANSCO. Any cost in amending the programme will be communicated to the Applicant and their agreement secured that such cost is accepted. Once agreement exists, one instruction to the relevant parties will be issued.

The calculation of the one-off charge for write-off of assets is outlined below:

Write-off charge = 100% of remaining NAV of redundant assets

A one-off charge shall be paid in full prior to completion of works and energisation of the same. A Customer may request the one-off works to be annuitized over the period of the substantive Connection Assets, the request will be considered by TRANSCO.

9.5 Consents

The Customer will pay for all costs incurred by TRANSCO; directly or indirectly, in obtaining all consents associated with a connection. These costs will include both TRANSCO internal and external costs, covering municipality permissions, appeals, landscaping, legal work, surveys and other related costs.

The actual costs will be treated in a manner consistent with the treatment of Engineering Costs and recovered as part of the annual Connection Charge, once the connection is energised. Where such activities are related to modification of an energised connection, then the costs will be added to the modification cost and recovered in the same manner as all other costs related to the modification.

9.6 Land

Normally there are no land charges. Where TRANSCO is required to purchase land to facilitate a connection, a portion of the purchase cost will be passed through to the Customer and recovered as part of the Connection Charge.

Where TRANSCO is required to lease land for a Connection Site, the costs of the lease will be recovered each year as a component of the Annual Connection Charge.

9.7 Termination Charges.

All costs related to termination of Connection Assets will be recovered as a one-off charge. Greater detail on the termination related charge, including disconnection, are detailed in Section 11.

9.8 Miscellaneous Charges

Other contract specific charges may be payable by the Customer. These will be set out in the agreements where appropriate.

10. Establishing a Shared Site

In this Section, the approach to be taken in establishing a shared Connection Site between an Applicant and TRANSCO is outlined.

10.1 Connection Offer - Shared site

In establishing a connection, TRANSCO shall identify the assets which it intends to connect and associated outline works programme. The Applicant may at that time, request TRANSCO to develop, on their behalf, a Connection Site fully equipped with Customer Assets as required by the Customer.

The Applicant shall provide to TRANSCO confirmation of the works which are to be undertaken by them and those for which they request TRANSCO to construct. In so requesting, TRANSCO and the Applicant shall agree all engineering related matters prior to commencement of any works related to a Connection Offer.

In undertaking a joint development, both the Applicant and TRANSCO shall ensure that they cooperate to the extent needed to agree:

1. Final Tender Package with separate Bill of Quantities for the Applicant and TRANSCO;
2. Scope of work included in the tender documents and division of asset ownership;
3. Other items as may be required.

Where the Applicant and TRANSCO are unable, for whatever reason, to agree on the scope of the engineering works required, TRANSCO shall present to the Applicant a Connection Offer based purely on provision and construction of a standard TRANSCO connection arrangement suited to the type of connection requested by the Applicant. Responsibility for provision of assets, as may be required to permit connection to TRANSCO's Connection Assets, shall be the sole responsibility of the Applicant.

Where on-site works are managed under separate contracts; Applicant and TRANSCO, both parties will establish clear working arrangements so as to avoid delivery programme delay on the main Connection Assets. In such an arrangement, responsibility for timely energisation is held by both parties. Where the transmission assets are installed and energised in accordance with an agreed work programme, as set out in the Connection Offer, TRANSCO shall reserve the right to commence charging for the connection irrespective of Customer connected Demand.

11. Within Charging Period Change and End of Life Treatment

This Section provides guidance on the treatment of change in use at a Connection Site and how TRANSCO shall manage the Connection Charge at the end of a Charging Period.

11.1 Within Charging Period Change

During the Charging Period should TRANSCO modify the connection arrangement such that the basis of allocation would be altered, the Connection Asset allocation will not be adversely affected and the initial basis of charging as presented in the Connection and Interface Agreement shall be maintained.

If a Customer during the Charging Period requests a modification to the connection arrangement, then such a change in the allocation of Connection Assets may arise. TRANSCO shall as part of the response to a modification request advise the Customer as to the impact on Connection Asset allocation related Connection Charge.

If an application for connection is received and in TRANSCO's opinion connection can be made from an existing Connection Site, the Connection Offer shall be based on such an option. Customers connected to the Connection Site will not be adversely affected by the new connection. The initial basis of charging as presented in the Connection and Interface Agreement shall be maintained. Depending upon the basis of asset allocation, the Customer may evidence a lowering in the Connection Charge.

Where a new Customer is connected to an established Connection Site as referenced above, the charges to the new Customer shall be based on those of a shared site. At the end of the Charging Period set to the Connection Site, both Customers shall be advised of the options as set out in Section 11.4.

Where a Customer issues a formal notice to terminate their connection, other Customers connected at the same Connection Site shall be notified and provided with an estimate as to the impact on their annual Connection Charge.

11.2 Termination in Advance of the Complete Charging Period

A Customer shall give notice 24-months' notice ahead of the next change in Annual Connection Charge that it intends to terminate a Connection and Interface Agreement and no longer requires an energised connection. 12 months prior to the start of the intended termination, the Customer shall formally notify TRANSCO of their firm intention to cease use of the Connection Assets.

TRANSCO shall, in response to receipt of the initial notification of intent to request permanent disconnection, advise the Customer of the estimated cost. The initial estimate will be provided within 30 days from receipt of an initial notification. This cost will be understood by all to be a Termination Charge. The Termination Charge will be payable by the Customer during the last Charging Year the Connection Site is to be connected and energised to the transmission network. The Termination Charge will include all direct and indirect costs as incurred by TRANSCO in effecting disconnection of the Customer's assets at the Connection Site.

The Termination Charge will be calculated as follows:

Termination Charge = C_n + NAV_n + R – CC

Table 4: Termination Charge Definition of Terms

Term	Definition
C_n	Outstanding Connection Charge for Year n
NAV_n	NAV of Connection Site cost allocation to the relevant Customer at the end of the Charging Year (Year n)
R	All costs related to removal of redundant assets, making good the Connection Site and asset refurbishment allocated to the Customer seeking termination based on their Connection Site cost allocation.
CC	An allowance for previously paid capital contributions by the relevant Customer as at date of termination.

If any asset in respect for which a termination payment was made, is reused within 12 months following disconnection, removal and refurbishment, TRANSCO will provide a refund against the Termination Charge equivalent to the expected reuse benefit to TRANSCO. Reuse will not be deemed to have occurred where assets remain at a site merely to enable the continued connection of existing Customers at the same Connection Site on the date of termination. The Customer shall remove all their assets from the Connection Site as required under the Connection and Interface Agreement.

Where an asset is shared, then such an asset may not be retired. In such an arrangement, the Customer will be liable for NAV of the shared asset. The value of the shared asset will be allocated to the Customer seeking termination based on their Connection Site cost allocation.

TRANSCO in the absence of a 24-months' notice of intent to terminate is not bound to terminate in 12 months following submission of a firm termination notice. In such a situation a Connection Charge for the full Charge Year will remain payable. In determining the amount of the Termination Charge TRANSCO shall consider all previous capital contribution made by the Customer for those assets that are to be retired.

11.3 Unrealised Demand and Demand Reduction

Where a Customer's Demand at a Connection Site is consistently, over a 3-year period, less than the agreed capacity as set out in the Connection and Interface Agreement, TRANSCO shall have the right to utilise the capacity elsewhere on the network, if required. The Connection and Interface Agreement will be amended to reflect the changed Connection Assets, if applicable and capacity reduction.

TRANSCO shall have no obligation to the Customer to support any cost that may subsequently be incurred by the Customer in seeking to reinstate the original capacity application and offer.

Where Connection Assets are deemed to be over specified because of a change in Customer use or unrealised Customer Demand, then TRANSCO shall remove Connection Assets that no longer match the Demand needs.

All costs incurred by TRANSCO will be recovered from the Customer and this will include disconnection, removal and refurbishment along with, the outstanding NAV of the relevant Connection Assets. Any asset subsequently reused shall be treated in the same manner as that related to early termination; Section 11.2. This includes an assessment being made at the time the asset is ready for removal as to the type and condition of the asset and if such an item can be reused by TRANSCO within a planned project. Where such an opportunity exists, an estimate of the asset value, net of transport, refurbishment and storage cost will be made. An offer will be made to the Customer based on the review and network need.

Where recovery of Connection Assets is not possible, then the Customer shall reimburse TRANSCO all costs over what would have been a Minimum Cost Scheme and related excess operation, repair and maintenance charges over the remaining lifetime of the assets.

Similarly, where a Customer wishes to reduce their Connection Site capacity, they shall notify TRANSCO. TRANSCO shall respond advising as to the estimated cost. Any subsequent reduction shall be treated in the same manner as detailed above for change of use or unrealised Demand. Similarly, any capacity released from the Connection Site will be eligible to be used for other users of the transmission network.

11.4 End of Life Treatment

48 months prior to Connected Assets reaching the end of the Charging Period, TRANSCO shall notify the Customer that the Charging Period is due to end. The Customer will be provided with three options:

1. The Customer may remain connected to the transmission network and choose to have the Connection Assets replaced, whereupon a new Charging Period will commence from the date the replacement assets are energised.
2. Where the Connection Assets are in good asset health and able, with or without refurbishment, to be operated for a period beyond the notional asset life the existing Connection Assets can with the agreement of the Customer and TRANSCO remain in service. Where such an arrangement exists, any enhanced planned maintenance as may be needed to support extended operation will be agreed between TRANSCO and the Customer. In seeking to elongate the asset life, the Customer will be accepting responsibility for any corrective maintenance and asset replacement of the Connection Assets as may be required. TRANSCO shall continue to charge for operation and maintenance but shall cease to recover and payment for Return on Assets or depreciation.
3. The Connection Assets will be de-energised and works put in place for the site to be decommissioned. All Connection Assets will be dismantled and removed. The Customer will pay to TRANSCO all costs incurred in returning the Connection Site to its state prior to the construction of the connection.

Depending upon the Customer's decision, TRANSCO shall either present to the Customer a Connection Offer or modify the Connection and Interface Agreement. In the event the Customer chooses to be de-energised and Connection Assets are removed, TRANSCO shall provide a cost estimate of the dismantling and site removal works. Any salvage value from the removed assets or reuse value as may be realised by TRANSCO shall be paid to the Customer net of all refurbishment and storage costs.

12. Calculation of the Annual Connection Charge

Presented below is the basis upon which an annual Connection Charge will be determined. The form of calculation used is as agreed by the DoE and subject to external audit.

The calculation of Connection Charge is based on the assets declared as being Connection Assets and apportioned to the Customer based on the principles set out in this Statement.

The Connection Charge is based on five components:

1. Gross Asset Value;
2. Depreciation;
3. Net Asset Value;
4. Return on Assets, and
5. Operation and maintenance costs.

The Connection Charge components are, for the purpose of this Statement, considered to be capital related (depreciation and Return on Assets) and non-capital related (operation and maintenance).

The value of each component is based on parameters agreed with the DoE. At each price control reset, TRANSCO shall notify the Customer of a change to the Connection Charge which has arisen due to variation in one or all of the above listed components listed.

12.1 The Basic Annual Connection Charge Formula

The final charge for each Connection Asset in Year "n" may be derived from the general formula presented below. Application of the formula is more detailed in the examples included later in this Section.

Annual Connection Charges = D_n (GAV_n) + R_n (NAV_n) + SSF_n (GAV_n)

The meaning of the terms used in the above formula is defined in Table 4.

Table 4: Annual Connection Charge Definition of Terms

Term	Definition
n	Charging Year to which charge relates
GAV_n	Gross Asset Value for Year n
NAV_n	Net Asset Value for Year n based on re-valued GAV_n
D_n	Depreciation rate as percentage (equal to 1/Depreciation Period)
R_n	Rate of Return
SSF_n	Site Specific Factor for Year n for Operation and Maintenance (%) as a percentage of the GAV_n

For those years beyond the Replacement Period for which the Customer's assets remain connected to the transmission system the value of NAVn and Dn shall be zero.

The value of the main components referenced in the above formula are described in more detail in the following sections.

12.1.1 Calculation of the Gross Asset Value

The Gross Asset Value (GAV) represents the modern equivalent cost of the Connection Assets. For a new asset it will be the costs incurred by TRANSCO for the provision of that asset. Typically, the GAV is made up of the following cost components:

a. Direct and indirect internal engineering activities (Engineering Charges);
b. Design consultancy;
c. Procurement activities and contract related costs;
d. Construction works;
e. Site supervision by external parties, and
f. Interest during construction.

12.1.2 Annual Adjustment of GAV

The GAV of an asset is re-valued each year based on the original cost of an asset (the Base GAV) indexed to UAE Consumer Price Index (CPI) movement over a 12-month period, or part thereof, as reported in January. Where the Charging Date falls mid-year, TRANSCO will apply a part-year adjustment, in the first year of energisation, based on CPI recorded in the month of energisation to the following December in the same year.

The GAV revaluation method is as follows:

$$GAV_n = GAV_{n-1} * CPI_{n-1} / CPI_{n-2}$$

12.1.3 Calculation of Net Asset Value

The Net Asset Value (NAV) of each asset for Year "n", used for charge calculation, is the average (mid-year) depreciated GAV of the asset. The following formula calculates the NAV of an asset, where 'A_n' is the age of the asset (number of completed Charging Years old) in Year n:

$$NAV_n = GAV_n * \frac{\text{Depreciated Period} * (A_n + 0.5)}{\text{Depreciated Period}}$$

12.1.4 Depreciation Period

The Depreciation Period adopted by TRANSCO in respect to all Connection Assets, is as agreed with the DoE as per that in the applicable TRANSCO price controls of the relevant year in which a new connection or a modified connection was energized and Connection Agreement made.

Any detail presented as part of a worked example should only be considered as being provided to assist with understanding of how the principles underlying how a connection charge has been derived are applied. All variables related to return of investment and depreciation will be aligned with those agreed with the DoE.

The Depreciation is calculated on a straight-line basis. Where an asset is energised or charged mid-year the annual depreciation charge will be calculated on a pro-rata basis in respect to the months during the first year over which the connection was energised or charged.

12.1.5 Charging for Operation and Maintenance

The non-capital component of the Connection Charge is an operation, repair and maintenance charge and is based on the GAV. The operation and maintenance charge is determined through the application of an average percentage to the GAV. The percentage calculated is based on an allowed operating cost and Regulatory Asset Value (RAV) agreed between TRANSCO and the DoE at the time of finalising a price control. A separate charge for water and electricity is detailed in the formula as a Site-Specific Factor (SFF).

The SSF is determined from TRANSCO operating cost attributed to operation and maintenance of the assets plus support administration cost divided by the GAV. The operating and maintenance cost is that value agreed with the DoE. The GAV is that equivalent to our Regulatory Asset Base. The SSF is specific to each connection site, and may change from time to time, ranging between 1.0% to 1.34%.

The application of an average percentage is intended to cover the routine maintenance of assets, provision of maintenance spares and specialist tools for maintenance activities, maintenance of strategic spares for major plant items to minimise recovery times following asset failure. This non-capital element will be identified in the charging appendices of relevant Connection Agreements.

The normal charging arrangement will be to recover operation and maintenance cost on an annual basis. The Applicant may however, request TRANSCO to capitalise such a cost and charge the same as a one-off charge before energisation. TRANSCO, if so requested, shall provide terms to the Applicant for such an option at the time of submitting a Connection Offer.

12.2 Adjustment for Capital Contributions

A capital contribution, when requested by TRANSCO and agreed by the Customer, based on the allocated GAV at the time of commissioning will act to reduce the annual Connection Charge. Typically, a capital contribution may be requested to address, in part or full, costs related to the:

a. Construction costs;
b. TRANSCO Engineering costs (Engineering Charge x job hours);
c. Interest During Construction (IDC).

If an Applicant chooses to make a 100% capital contribution towards their allocation of a Connection Asset, then no capital charge will be payable and the Connection Charge will be calculated as follows:

$$\text{Annual Connection Charge}_n = SSF_n * (GAV_n)$$

TRANSCO shall advise the profile of capital contributions payable by the Applicant in the Connection Offer. The payment profile will be determined based on TRANSCO's cash flow Demand specific to the project. Unless TRANSCO considers it appropriate that a different capital contribution profile should be applied.

If agreement exists to make a Partial Capital Contribution (PCC) towards their allocation of a connection asset, then the connection charges for that asset would be calculated as follows:

$$\text{Annual Connection Charge}_n = D_n(GAV_n*PCCF) + R_n\,(NAV_n*PCCF) + SSF_n*(GAV_n)$$

Where the Partial Capital Contribution Factor (PCCF) is calculated based on the capital contribution amount divided by the Connection Asset GAV.

To aid understanding a worked example of a customer capital contribution has been provided in Section 12.5.

Any capital contribution made by an Applicant does not attract a return on or return of a capital charge. A charge for operation and maintenance shall be levied where TRANSCO is responsible for undertaking such tasks.

Any replacement of an asset against which a full or partial capital contribution has been made, will be notified to the Customer so that appropriate arrangements for capital contribution to the full or part replacement may be agreed. Any asset replacement prior to end of the Replacement Period will be agreed with the Customer prior to any replacement being affected.

Where a modification to an existing connection occurs at the Customer's request, the Connection Charge will be calculated based on the principles described above. The provision of additional Connection Assets required to meet the Customer's requirements will be calculated as for a newly energised connection.

Charges will continue to be levied for all assets previously connected that remain in service. Such assets will be charged in accordance the principles set out as if the modified connection had not been requested.

Where a modification results in assets becoming redundant that are not yet at the end of the Charging Period, then TRANSCO shall apply a Termination Charge as well as other costs, as may be applicable, presented in Section 11. Where a Customer requests a modification, such that the Connection Site is no longer required, then TRANSCO shall upon receiving the request advise as to the level of termination change payable prior to the termination being undertaken.

12.3 Notification of Charge Amendment.

The Connection Charge shall be reviewed annually to address and implement any change as may fall due consequent upon revised components of the Connection Charge. In normal circumstances, this will include annual change to:

a. Consumer Price Index,
b. Net Asset Value due to prior year payments,

TRANSCO shall notify a Customer three months prior to a change in a Connection Charge as to the revised annual payment.

In the case of a revised Price Control agreed with the DoE, notification shall be provided within one-month of agreeing the new Price Controls.

12.4 Notification of New Connection Site Charge

TRANSCO shall notify the Applicant of the Connection Charge that will be payable in the Charging Year for a Connection Site that is forecast to be energised part through a Charging Year. The basis of a part-year charge will be each full month from the date of energisation to the last month of a Charging Year. Where in the event the energisation date is advance or deferred within a Charging Year, then TRANSCO will in the event of an over estimation refund the net difference within the Charging Year, where able or affect the adjustment in the following Charging Year. In the event of an under forecast, the under forecast will be recovered in the next Charging Year.

12.5 Example of Connection Charge Calculation:

The examples presented below are provided only to permit an Applicant to understand how the annual Connection Charge is calculated.

Assumptions:

a. Gross Asset Value of AED 100,000,000;
b. the asset is commissioned on 1 January;
c. Consumer Price Index (CPI) or Inflation;

d. the asset is depreciated over 40 years;
e. the Site-Specific Operation and Maintenance Cost component remains constant throughout the period and is assumed to be equal to 1.34% of asset GAV, and
f. the rate of return charge remains constant at 4.6% for the 40-years' life of the asset.

Tables 5, 6 and 7 below show the connection charges without and with capital contribution made by the Applicant.

These examples are provided for illustrative purpose only. The return, Depreciation Period and operation and maintenance cost will be consistent with those agreed between TRANSCO and the DoE at each price control, as per the notes/assumptions under each table.

Table 5: Example of a Connection Charge Without Capital Contribution

Year	CPI	Re Evaluated GAV (mAED)	Capital Charges (mAED)	Mid-Year NAV (mAED)	Return on Mid-Year NAV (mAED)	Site Specific O&M Cost (SSC) (mAED)	Total Annual Charge (mAED)
1	1.77%	100.00	2.50	98.75	4.54	1.34	8.38
2	-0.37%	101.77	2.54	97.95	4.51	1.36	8.41
3	2.00%	101.39	2.53	95.06	4.37	1.36	8.27
4	2.00%	103.42	2.59	94.37	4.34	1.39	8.31
5	2.00%	105.49	2.64	93.62	4.31	1.41	8.36
"	"	"	"	"	"	"	"
10	2.00%	116.47	2.91	88.81	4.09	1.56	8.56
"	"	"	"	"	"	"	"
20	2.00%	141.98	3.55	72.76	3.35	1.90	8.80
"	"	"	"	"	"	"	"
30	2.00%	173.07	4.33	45.43	2.09	2.32	8.74
"	"	"	"	"	"	"	"
40	2.00%	210.97	5.27	2.64	0.12	2.83	8.22

Notes: Calculations are based on (i) Total Connection Site Gross Asset Value (GAV) of AED 100 million, (ii) 40 years asset life i.e. 2.50% depreciation rate, (iii) Return of return of 4.60% (iv) Site Specific Factor of 1.34% (v) without capital contribution and (vi) 100% share of Connection Site i.e. Single User connection.

Table 6: Example of a Connection Charge with 50% capital contribution

Year	CPI	Re Evaluated GAV (mAED)	Capital Charges*PCCF (mAED)	Mid-Year NAV (mAED)	Return on Mid-Year NAV *PCCF (mAED)	Site Specific O&M Cost (SSC) (mAED)	Total Annual Charge (mAED)
1	1.77%	100	1.25	98.75	2.27	1.34	4.86
2	-0.37%	102	1.27	97.95	2.25	1.36	4.89
3	2.00%	101	1.27	95.06	2.19	1.36	4.81
4	2.00%	103	1.29	94.37	2.17	1.39	4.85
5	2.00%	105	1.32	93.62	2.15	1.41	4.89
"	"	"	"	"	"	"	"
10	2.00%	116	1.46	88.81	2.04	1.56	5.06
"	"	"	"	"	"	"	"
20	2.00%	142	1.77	72.76	1.67	1.90	5.35
"	"	"	"	"	"	"	"
30	2.00%	173	2.16	45.43	1.04	2.32	5.53
"	"	"	"	"	"	"	"
40	2.00%	211	2.64	2.64	0.06	2.83	5.52

Notes: Calculations are based on (i) Total Connection Site Gross Asset Value (GAV) of AED 100 million, (ii) 40 years asset life i.e. 2.50% depreciation rate, (iii) Return of return of 4.60% (iv) Site Specific Factor of 1.34% (v) with Partial Capital Contribution Factor (PCCF) of 50% and (vi) 100% share of Connection Site i.e. Single User connection.

Table 7: Example of a Connection Charge with 50% capital contribution & 40% share of Connection Site

Year	CPI	Re Evaluated GAV (mAED)	Capital Charges*PCCF (mAED)	Mid-Year NAV (mAED)	Return on Mid-Year NAV *PCCF (mAED)	Site Specific O&M Cost (SSC) (mAED)	Total Annual Charge (mAED)
1	1.77%	100	0.50	98.75	0.91	0.54	1.94
2	-0.37%	102	0.51	97.95	0.90	0.55	1.96
3	2.00%	101	0.51	95.06	0.87	0.54	1.92
4	2.00%	103	0.52	94.37	0.87	0.55	1.94
5	2.00%	105	0.53	93.62	0.86	0.57	1.95
"	"	"	"	"	"		"
10	2.00%	116	0.58	88.81	0.82	0.62	2.02
"	"	"	"	"	"		"
20	2.00%	142	0.71	72.76	0.67	0.76	2.14
"	"	"	"	"	"		"
30	2.00%	173	0.87	45.43	0.42	0.93	2.21
"	"	"	"	"	"		"
40	2.00%	211	1.05	2.64	0.02	1.13	2.21

Notes: Calculations are based on (i) Total Connection Site Gross Asset Value (GAV) of AED 100 million, (ii) 40 years asset life i.e. 2.50% depreciation rate, (iii) Return of return of 4.60% (iv) Site Specific Factor of 1.34% (v) with Partial Capital Contribution Factor (PCCF) of 50% and (vi) 40% share of Connection Site shared asset.

13. Project Cancellation Cost

The Applicant is liable for all costs reasonably incurred by TRANSCO in progressing a Connection Offer and or any transmission works related to an accepted Connection Offer . This obligation is detailed below so that the Applicant may be aware of the liability accepted by them when seeking a connection to the transmission system

If a project is cancelled by an Applicant after accepting a Connection Offer, the Applicant shall be liable for all costs incurred; internal, external, direct and indirect, however so incurred by TRANSCO.

TRANSCO shall recover any and all costs to TRANSCO not yet charged to us but for which a charge is expected to be levied and for which issuance of a cancellation notice by TRANSCO is unlikely to obviate such a cost burden.

14. Asset Replacement

Detail presented in this section provides guidance as to how TRANSCO will progress early replacement of assets prior to the full depreciation period.

The Connection Charge is calculated on the assumption that Connection Assets will not need to be replaced until the end of the Charging Period or Replacement Period.

If a Connection Asset is replaced before its Replacement Period, TRANSCO will enter into an agreement with the Customer for the replacement. TRANSCO will continue to charge for the original asset and make no charge to the existing Customer for the new asset until the original asset's Replacement Period. Thereafter, the new asset will form the basis upon which the capital charge and operating charge components of the Connection Charge are calculated. The Net Asset Value liability at the Connection Site shall reflect the carrying value of the replaced asset.

The cost of replacement shall include all costs consistent with the approach taken for establishing a new connection. In addition, recovery of all costs needed to disconnect and dispose, consistent with the approach presented in Section 11, shall be applied. Any modification works as may be needed to accommodate the replacement shall be recovered through the Connection Charge or a one-off payment.

Where replacement occurs after the original asset's charging age the charge will be calculated based on the new asset value as at the date of completion.

TRANSCO

15. Appendices

Appendix 1: Examples of Electricity Connection Assets Allocation

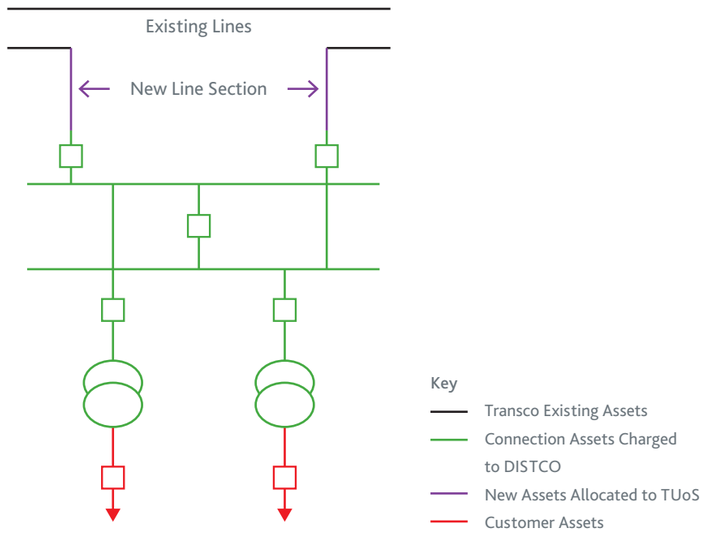
To aid understanding of asset allocation at a Connection Site, TRANSCO has provided several connection examples. In each example a simplified line diagram is presented, appropriately coloured, to reflect the different asset classifications.

The examples presented in this statement are provided for guidance only. Matters specific to a connection shall be presented in the Connection Offer. In considering the examples, the following should be noted:

- The diagrams show the primary assets (overhead lines, cables, substations). Ownership, operation and maintenance of the secondary assets (protection, control, and communications) should be considered in most cases as following the classification of the primary assets.
- Asset allocation of Connection Assets has been agreed between DISCOs and TRANSCO. The agreed allocation is presented in Appendix 4. Where agreed between a DISCO and TRANSCO modification to the asset allocation is permissible.

Example of Connection Assets for a DISCO Customer

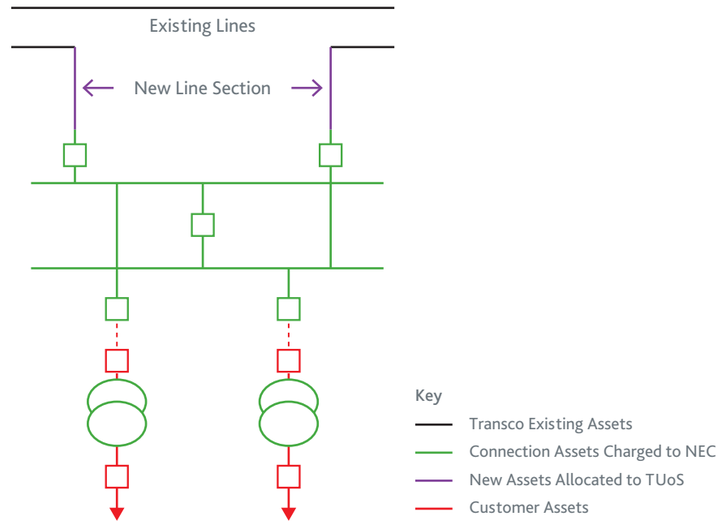
Figure 1: Connection Assets for a DISCO Customer



General note: In certain instances, an additional circuit breaker may be required at the customer's transformer depending on network studies results and safety arrangements.

Example of Connection Assets for a Non-Embedded Customer

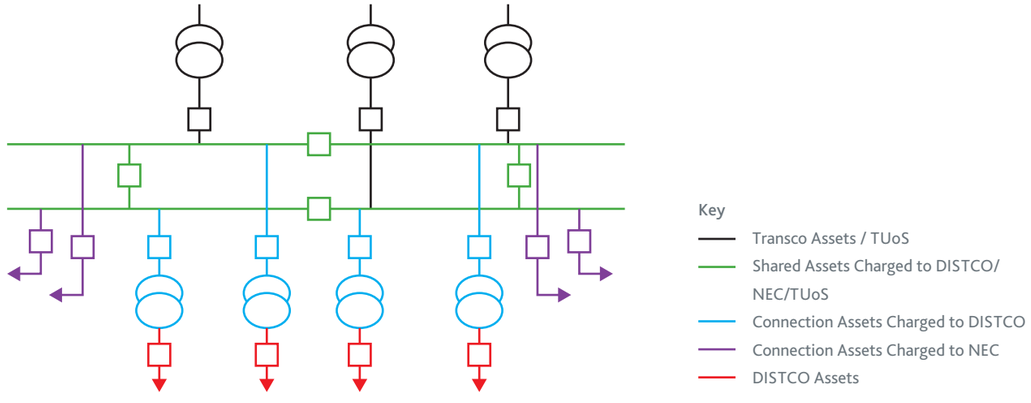
Figure 2: Connection Assets for a Non-Embedded Customer



General note: In certain instances, an additional circuit breaker may be required at the customer's transformer depending on network studies results and safety arrangements

Example of Connection Assets at a Shared Site

Figure 2: Connection Assets at a Shared Site



General note: In certain instances, an additional circuit breaker may be required at the customer's transformer depending on network studies results and safety arrangements

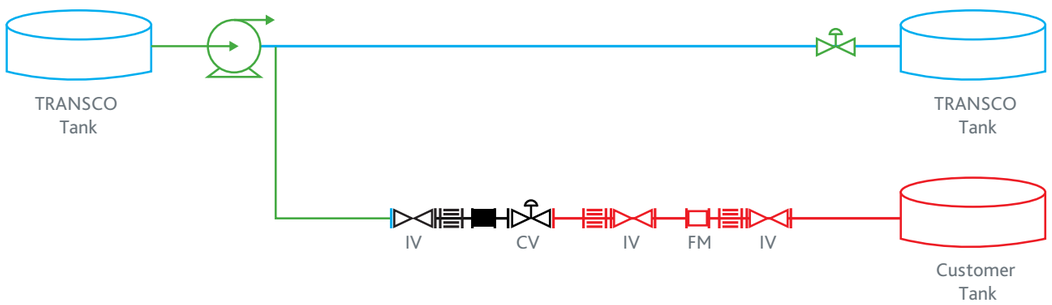
Appendix 2: Examples of Water Connection Asset Allocation

In Appendix 1, guidance was provided in respect to classification of Connection and Infrastructure Assets for electricity. The same is provided in this appendix albeit for Water assets.

The examples presented in this statement are provided for guidance only. Matters specific to a connection shall be presented in the Connection Offer.

Example of Connection Assets: Standard Connection

Figure 4: Standard Water Connection



Appendix 3: Example of a Site Responsibility Schedule

The Connection and Interface Agreement is a key document within the Connection Offer. The responsibilities presented in that agreement align with key parts of the Connection Charges. In this appendix we provide an example of a Site Responsibility Schedule this is an important section within the Connection and Interface Agreement and will need to be agreed prior to the connection becoming energised.

The Connection and Interface Agreement; Ownership, Access, Maintenance and Operation Matrix (OAOM) responsibilities as presented in Table 7: Schedule of Responsibility: OAOM Water Matrix and Table 8: Schedule of Responsibility: OAOM Electricity Matrix is used to inform the process of charging for transmission operation and maintenance charges. The detail presented below is for example only. Each Connection Site shall be governed by the site responsibility schedule attached to the Connection and Interface Agreement. The document is technical in nature. It is assumed that the document will be read by a technically competent person familiar with transmission and distribution assets. Accordingly, we have not provided a definition for each of the assets referenced.

Table 7: Schedule of Responsibility: OAOM Water Matrix

Item Description	Owner	Access	Operation	Control	Maintenance	Safety
All pipe work including all fittings	T	T	T	N/A	T	T
Line valve (motorized butterfly valve) and chamber including all fittings.	T	T	T	T	T	T
Control valve including all pipe fittings inside the chamber	T	T	T	T	T	T
Flow control + flow meter valve chamber	T	T	T	N/A	T	T
Flow meter including dismantling joint shown	D	D	D	D	D	D
Pressure relief system including all fittings and instrumentation as identified in the P& ID	D	D	D	D	D	D
Downstream line valve (motorized butterfly valve) including all fittings	D	D	D	D	D	D
Downstream line valve chamber structure	D	D	D	N/A	D	D
Power cable & power meter from existing feeder to distribution board inside TRANSCO shelter	D	D	D	D	D	D
Shelter with all related equipment: control boards, switches, firefighting, telecom, UPS/batteries and A/C Units except metering outstation and flow transmitter.	T	T	T	T	T	T
Power and control cables from TRANSCO shelter to CV and all other company equipment as identified in the P&ID	T	T	T	T	T	T
Power cables from distribution board feeding user equipment.	D	D	D	D	D	D/T
Control cable from flow meter to flow transmitter and metering outstation	D	D	D	D	D	D/T
Metering outstation and flow transmitter inside shelter	D	D	D	D	D	D/T
All other control cables including cable from flow transmitter to SCADA RTU.	T	T	T	T	T	T

Table 8: Schedule of Responsibility: OAOM Electricity Matrix

Item Description	Voltage	Feeder Name or Equipment	Owner	Access	Operation	Control	Maintenance	Safety
Switch gear and local control panel	132kV	Spare OHL feeder (Partially equipped)	T	T	T	T	T	T
Switch gear and local control panel	132kV	OHL feeder 2	T	T	T	T	T	T
Switch gear and local control panel	132kV	Cable spare cable feeder	T	T	T	T	T	T
Switch gear and local control panel	132kV	OHL Feeder (Connected to Customer Station)	T	T	T	T	T	T
Switch gear and local control panel	132kV	Transformer-1 (100MVA T201)	T	T	T	T	T	T
Switch gear and local control panel	132kV	Metering/Earthing	T	T	T	T	T	T
Switch gear and local control panel	132kV	Bus Coupler	T	T	T	T	T	T
Switch gear and local control panel	132kV	Transformer-2 (100MVA -T202)	T	T	T	T	T	
Switch gear and local control panel	132kV	OHL Feeder -2 (Connected to Customer Station)	T	T	T	T	T	T
Switch gear and local control panel	132kV	Cable spare cable feeder	T		T			T
Switch gear and local control panel	132kV	Cable/Tr. spare feeder	T	T	T	T	T	T
Switch gear and local control panel	132kV	OHL Feeder -1	T	T	T	T	T	T
Switch gear and local control panel	132kV	Spare OHL feeder (Partially equipped)	T	T	T	T	T	T
Power transformer (T201)	132/33KV	100 MVA-132/33kV Power Transformer No. 1	T	T	T	T	T	T
132 kV cables from GIS to transformers	132 kV		T	T	T	T	T	T
33kV cables	33kV	33kV cables from Transformers to 33kV SWG	D	D	D	D	D	D
33kV cables	33kV	33kV cables from 33kV SWG to customers	D	D	D	D	D	D
Neutral Earthing Reactor (NER1)			T	T	T	T	T	T
Neutral Earthing Reactor (NER2)			T	T	T	T	T	T
Station auxiliary transformer 1	33/415KV	1000kVA,33/0.415kV Aux. Transformer-1	D	D+T	D	D	D	D
Station auxiliary transformer 2	33/.415KV	1000kVA,33/0.415kV Aux. Transformer-2	D	D+T	D	D	D	D
Fire alarm system			T	T	T	T	T	T
CO2 firefighting system			T	T	T	T	T	T
Air condition system		Air Condition System (complete)	T	T	T	T	T	T
Fire water tank, fuel tank and fire pumps			T	T	T	T	T	T
		Low Voltage Alternating Current						
LVAC panels	400 VAC	AC Incomers 1&2	T	T	T	T	T	T
LVAC panels	400 VAC	AC Bus Section	T	T	T	T	T	T
LVAC panels	400 VAC	AC Outgoing panels	T	T	T	T	T	T
		Charger and Direct Current Auxiliaries						
110V DC chargers A&B	110VDC	Chargers 1&2	T	T	T	T	T	T
110VCU 1 &2	110VDC	CU 1 &2	T	T	T	T	T	T
110V DCDB 1 &2	110VDC	DCDB 1 &2	T	T	T	T	T	T
48V DC chargers A&B	48VDC	Chargers 1&2	T	T	T	T	T	T
48VCU 1 &2	48VDC	CU 1 &2	T	T	T	T	T	T
UPS	132KV	Inverter Panel	T	T	T	T	T	T
UPS	33KV	Inverter Panel	D	D	D	D	D	D+T
		Battery Room						
110VDC Battery 1 bank- A&B	110VDC	Battery-1 Bank-A&B	T	T	T	T	T	T
110VDC Battery 2 bank- A&B	110VDC	Battery-2 Bank-A&B	T	T	T	T	T	T
48VDC batteries 1&2	48VDC	Batteries 1&2	T	T	T	T	T	T
Fuse Box	48VDC	Battery Fuse Box 1&3	T	T	T	T	T	T
		Telecom Room						
Telecom panels		OLTE/MUX 1&2	T	T	T	T	T	T
RAU/NKS		RAU/NKS	T	T	T	T	T	T
MDF panel		MDF panel	T	T	T	T	T	T
Telephone Key System (TKS)		Telephone Key System	T	T	T	T	T	T
Converter panel		Converter panel	T	T	T	T	T	T
		SCMS Room (TRANSCO)						
SCMS Panels	132kV	SCMS panels 1 &2	T	T	T	T	T	T

Item Description	Voltage	Feeder Name or Equipment	Owner	Access	Operation	Control	Maintenance	Safety
AVR for 132/33kV transformers	132kV	AVR transformers	T	T	T	T	T	T
Alarm panels	132kV	Common alarm panels	T	T	T	T	T	T
FMS panel	33kV	FMS panel	T	T	T	T	T	T
SCMS workstation		SCMS	T	T	T	T	T	T
SCMS Room (DISCO)								
SCMS panels	33KV	SCMS panels 1 &2	D	D	D	D	D	D
Alarm panels	33KV	Common Alarm Panel	D	D	D	D	D	D
Communication panel	33KV	Communication Panel	D	D	D	D	D	D
Tariff metering	33KV	Tariff metering	D	D	D	D	D	D
33kV Switchgear Room								
SCMS panels	33KV	SCMS panels 1 &2	D	D	D	D	D	D
Alarm panels	33KV	Common Alarm Panel	D	D	D	D	D	D
Communication panel	33KV	Communication Panel	D	D	D	D	D	D
Tariff metering	33KV	Tariff metering	D	D	D	D	D	D
33kV Switchgear Room								
Bus-coupler and riser	33kV	Bus-coupler and riser BB1& BB2	D	D+T	D	D	T	D
Incomer-1	33kV	T201 (132/33kV) Incomer	D	D+T	T	D	T	D
Auxiliary transformer -1	33kV	1000kVA,33/0.415kV Aux. Tr.1	D	D+T	D	D	D	D
Cable feeders	33kV	All 33kVCable feeders Cable feeders	D	D	D	D	D	D
Control and Relay Protection (TRANSCO)								
Transformer protection	132KV	Transformer-1 Protection panels	T	T	T	T	T	T
Protection panels	132kV	OHL/Cable Protection panels to other Customers	U	T+U	U	U	U	T+U
Transformer protection	132KV	Bus Coupler Protection			T	T		T
Protection panels	132kV	Bus-bar protection	T	T	T	T	T	T
Protection communication panel		SCMS communication panel	T	T	T	T	T	
Control and Relay Protection (DISCO)								
Protection panel	33kV	Feeders protection panels	D	D+T	D	D	D	D
Protection panel	33kV	Bus-coupler protection	D	D	D	D	D	D

Notes: "D" refers to DISCO, "T" refers to TRANSCO.

Appendix 4: TRANSCO and DISCO Shared Site Asset Ownership

We have presented in this Appendix the allocation of Connection Assets between DISCO and TRANSCO. The allocation shown is general and reflects previous practice and agreement.

It is normal for TRANSCO to receive requests to provide and construct not only the Connection Assets but also asset to be owned and operated by DISCO. The detail presented in this appendix provides the asset ownership most likely to arise when TRANSCO undertakes all works; both dedicated and shared, associated with a connection. Actual allocation will be based on an agreed Bill of Quantity between TRANSCO and the Applicant specific to a connection arrangement.

Table 9: Asset Allocation Percentage for TRANSCO Provided Site

Item Description	TRANSCO (%)	DISCO (%)
Switchgears 132kV and above	100	-
Switchgears <132kV	-	100
Power transformers (with associated cables and protection & protect.)	100	-
Protection for switchgears 132kV and above	100	-
Protection for switchgears <132kV	-	100
Protection for power transformers (both sides)	100	-
Power transformers HV side connections & terminates	100	-
Power transformers MV side connections & terminals	-	100
Neutral grounding impedance (resistance/reactors)	100	-
Distribution transformers (with its cables & protect)	-	100
Reactive/capacitive power compensations HV	100	-
Reactive /capacitive power compensations MV	-	100
Power System Monitoring Scheme (PSMS)	100	-
Fault Monitoring System (FMS)	100	-
Tariff metering panels (meters & outstations)	-	100
Substation buildings, civil, fence site & services	60	40
Firefighting system for the entire SS	100	-
HVAC system for the entire SS	100	-

Table 10: Asset Allocation Percentage for TRANSCO Provided Site – WATER

Item Description	TRANSCO (%)	DISCO (%)
Pump station	100	-
Pipework up to flow meter	100	-
Isolation valves upstream of FCV	100	-
FCV	100	-
Flow meter chamber	-	100
Isolation valves upstream and downstream of FM	-	100
Equipment shelter including all control and monitoring	100	-
Settlement metering system - complete	-	100

Cost Share for Common Assets

Certain Connection Asset do not lend themselves to be easily allocated due to multiple usage. In terms of common items, such as; Low voltage multi core and telephone cables/Interface Cubicles, Telecommunication equipment, percentage allocation criteria shall be determined based on the number of High Voltage bays held by TRANSCO and the number of Low Voltage bays held by the Customer.

For most connections, the Substation Control and Monitoring System (SCMS), as well as auxiliary supplies, will be considered as being capable of being unbundled.

The above will generally apply to substations with combined buildings only.

Cost Share for Consultancy Services and Technical Studies

Consultancy services and technical studies shall be shared between TRANSCO and the DISCO according to the contribution of each party to the final capital cost related to supply and erection of the asset.

Appendix 5: Indicative Asset Installed Costs

This Appendix presents a range of indicative capital cost for assets most likely to be included in a connection arrangement. The detail is intended to enable Applicants to understand along with other information in the Statement the scale of a Connection Charge.

In drawing together, the detail presented, TRANSCO has considered cost charged to TRANSCO for the provision and installation of similar asset types. The unit costs are based on actual project cost incurred prior to approval of the connection statement by the DoE. The costs should not be considered as an average cost. In presenting the cost detail the same has been rounded to the nearest thousand Dirham.

The actual costs charged by TRANSCO will differ from those listed below and will reflect the market price incurred by TRANSCO for provision and installation of assets.

Electricity Assets Indicative Installed Costs

Table 11: Electricity Assets Indicative Costs

Item	Indicative Unit Cost (AED)	Unit
400kV generating/switching station substation	275,000,000	per/unit
400/220kV 3x500MVA substation	365,000,000	per/unit
400/220kV 2x500MVA substation	300,000,000	per/unit
400/132kV 3x500MVA substation	325,000,000	per/unit
400/132/22kV substation	410,000,000	per/unit
400/132/11kV substation	400,000,000	per/unit
220/132kV 2x200MVA substation	200,000,000	per/unit
220/33kV 3x120MVA substation	180,000,000	per/unit
132/33kV 3x120MVA substation	140,000,000	per/unit
132/22kV 4x60MVA substation	120,000,000	per/unit
132/11kV 4x40MVA substation	110,000,000	per/unit
220kV transformer feeder substation	100,000,000	per/unit
400kV transformer 500MVA	30,000,000	per/unit
220/33kV transformer 120MVA	17,000,000	per/unit
132/22kV transformer 60MVA	12,000,000	per/unit
132/11kV transformer 40MVA	8,000,000	per/unit
400kV bay extension	25,000,000	per/unit

Item	Indicative Unit Cost (AED)	Unit
400kV bay extension	25,000,000	per/unit
220kV bay extension	15,000,000	per/unit
132kV bay extension	10,000,000	per/unit
400kV quad circuit overhead line tower	4,000,000	per /km
400kV double circuit overhead line tower	2,500,000	per /km
132kV double circuit overhead line tower	1,800,000	per /km
400kV cable circuit	12,000,000	per /km
220kV cable circuit	8,000,000	per /km
132kV cable circuit	4,500,000	per /km
11kV cable circuit	1,000,000	per /km
100 MVAr SVC	10,000,0000	per/unit
400kV 100 MVAr Shunt Reactor	10,000,000	per/unit
220kV 100MVAr capacitor bank	7,000,000	per/unit
132kV 100MVAr capacitor bank	5,000,000	per/unit
NGR connected to 400/132kV transformer		
NGR connected to 220/33kV transformer	1,000,000	per/unit
NGR connected to 132/33kV transformer	1,000,000	per/unit

Table 12: Water Assets Indicative Installed Costs

Item	Indicative Unit Cost (AED)	Unit
Ductile iron pipeline 600mm DN	2,785,000	per/km
Ductile iron pipeline 800mm DN	4,418,000	per/km
Ductile iron pipeline 1600mm DN	14,467,000	per/km
Carbon Steel Pipeline 600mm DN	2,416,000	per/km
Carbon Steel Pipeline 1000mm DN	5,227,000	per/km
Carbon Steel Pipeline 1200mm DN	6,992,000	per/km
Carbon Steel Pipeline 1400mm DN	8,998,000	per/km
Carbon Steel Pipeline 1600mm DN	11,243,000	per/km
Steel tank reservoir capacity: 0.5 MIG	2,133,000	per unit
Steel tank reservoir capacity: 4 MIG	17,062,000	per unit
Steel tank reservoir capacity: 5 MIG	21,328,000	per unit
Steel tank reservoir capacity: 15 MIG	52,357,000	per unit
Steel tank reservoir capacity: 20 MIG	69,810,000	per unit
Concrete tank reservoir capacity: 0.5 MIG	2,658,000	per unit
Concrete tank reservoir capacity: 4 MIG	10,427,000	per unit
Concrete tank reservoir capacity: 5 MIG	26,583,000	per unit
Concrete tank reservoir capacity: 15 MIG	59,425,000	per unit
Concrete tank reservoir capacity: 20 MIG	79,234,000	per unit
Water pumping station 1000kW electrical capacity	21,400,000	kW
Water pumping station 880kW electrical capacity	18,850,000	kW

Appendix 6: Depreciation Period Connection Application Forms

All Connection Application Forms presented in this statement are available for download from the TRANSCO- website: www.transco.ae

Figure 5: Connection Application Form for a Distribution Company (Electricity)

To Be Filled by the Applicant (ADDC/AADC/FEWA/SEWA)	
Application Ref. No	*same as the letter ref.no*
Application Date	*Same as the letter date*

◯	Stage 1 Connection Application	◯	Stage 2 Connection Application

Distribution Companies Information	
Company Name	
Project Name	
Date the Requested Connections to be Operational	
Project Location (approximate coordinates)	
Substation/Transformer Location Inside the Project Site (approximate coordinates)	

1. Connection Details								
Connection Classification	◯	New	◯	Modification or Reinforcement of Existing Connection				
	◯	Temporary	◯	Permanent				
Connection Voltage	◯	132kV	◯	220kV	◯	400kV		
Interface Voltage	◯	11kV	◯	22kV	◯	33kV		
Number of Feeders Requested	◯	2	◯	3	◯	4	◯	Other (mention the number)
The number of feeders requested to the User site has been established to fulfill the security level per the USER's design requirements and the the associated risks and its impact is fully understood, acknowledged and accepted by the USER.							◯	YES
Connection Location	◯	Abu Dhabi islands' (Abu Dhabi island & vicinity, Reem, Saadiyat and Sowa)						
	◯	Eastern region	◯	Western (Gharbia) region				
	◯	Al Ain region	◯	Northern Emirates				

2. Interface with TRANSCO Network					
Substation Name and Acronym*					
**User shall identify the name of the TRANSCO substation they wish to connect.*					
		BUILD	OWN	OPERATE	MAINTAIN
	TRANSCO	◯	◯	◯	◯
	USER	◯	◯	◯	◯
Note-1: For the assets with voltages at or above 132kV, the applicant shall confirm whether the assets required to connect to TRANSCO network are to be built, owned and operated by TRANSCO or the applicant (USER).					
Note-2: Any assets to be owned, operated or maintained by TRANSCO will be required to be provided by Vendors prequalified by ADWEA and built to TRANSCO's design standards and specifications.					
Note-3: Any assets forming part of TRANSCO's active transmission system will require to be owned, operated and maintained by TRANSCO.					
Note-4: TRANSCO will only undertake to build the assets if reasonable time frame is provided for it to do so.					
Note-5: If the user builds the asset and transfer (Through Asset Transfer Agreement for AED 1 value) to TRANSCO to Own, Operate and Maintain, then the O&M charges for the transferred assets will be charged to User.					

3. Connection Compliance				
The applicant shall confirm it will comply with all the requirements stated in the Statement of Connection Charging Methodology	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Electricity Transmission System Security Standard (ETSSS)	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Electricity Transmission Code (ETC)	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Metering and Data Exchange Code (MDEC).	◯	YES	◯	NO
The applicant confirms that they will undertake any studies required by TRANSCO to demonstrate compliance.	◯	YES	◯	NO
Note: If NO in any Connection Compliance, the applicant shall state all non-compliances where the requirements are not met with justifications.				

4. Connection Justification				
The applicant confirms that in making the application they are fully responsible for the justification of the requested connection. This includes any assets that the applicant requests TRANSCO to build, own, operate and maintain.	◯	YES	◯	NO
Note: Failure to confirm the justification will result in the rejection of the connection application.				

5. Demand Forecast Requirements

Applicant confirms that the above Demand forecast data is consistent with EWEC's data (Copy of forecast submitted to EWEC / EWEC's forecast showing the requested Demand shall be attached)	◯	YES	◯	NO

Note: Failure to confirm the consistency with EWEC's Demand forecast data will result in the rejection of the connection application.

Applicant is required to provide Demand forecast data at each requested interface connection points per the Tables below

Table 1 Peak Non-Coincident Demand forecast (Peak Non-Coincident Demand is at the User Plant peak)

Connection Name/Location	Peak Non-Coincident Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

* *Requirement Year*

Table 2 Minimum Demand Forecast (Minimum Demand is at the User Plant Minimum Demand)

Connection Name/Location	Minimum Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

* *Requirement Year*

Table 3 Peak Coincident Demand Forecast (Peak coincident Demand is at the TRANSCO system peak)

Diversity factor applied to the peak non-coincident Demand for each interface connection point to arrive at the peak coincident Demand:

Connection Name/Location	Peak Coincident Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

* *Requirement Year*

Table 4 Demand Characteristics

Connection Name/Location	Infeed Short Circuit to TRANSCO Network	Power Factor	Demand characteristics (%)		
			Domestic	Commercial	Industrial
Name					

6. USER Plant Details

Plant Status	◯	NEW	◯	EXISTING	◯	UPGRADATION	◯	DEMAND DIVERSION

Note-1: For the Existing and plant Upgradation, the details of Non-Peak, Minimum and Peak Demand of the existing plant shall be included in the Demand forecast table. The details of the existing power supply arrangement shall also be explained.

Note-2: For the Demand diversion, the details of Non-Peak, Minimum and Peak Demand of the existing plant shall be included in the Demand forecast table. The details of the existing power supply arrangement and the reason for changing the existing connection to requesting new connection shall also be explained.

Embedded Generation	◯	YES	◯	NO	

Unit Name/No	Capacity (MW)	Power Factor	Xd''
Unit 1			
Unit 2			
...			

7. Interface Connection Substation Plot and Corridors

Substation Plot and Corridors to be provided by:	◯	APPLICANT	◯	MUNICIPALITY			
If from Municipality, possibility of obtaining Municipality approval of the Proposed interface Substation Plot and access to the plot for connection:	◯	NO PROBLEM	◯	MEDIUM DIFFICULT	◯	VERY DIFFICULT	

Please note difficulty in obtaining approval of the proposed substation plot and/or corridors could result a delay in meeting the timeline requirements of the supply request. In such cases, Applicant is encouraged to propose alternate substation plot locations

8. Clearances from Other Agencies

Applicant confirms that the Applicant will obtain required clearances from the following.

Environmental agency	◯	YES	◯	NO
Department of Transport	◯	YES	◯	NO
Civil Defence	◯	YES	◯	NO
Urban Planning Council	◯	YES	◯	NO
Other relevant agencies	◯	YES	◯	NO

9. Supporting Documentation Checklist	
The below Documents shall be submitted along with this Connection Application.	
◯	Geographical map showing the location of the User Plant
◯	Geographical map showing the location of the User Substation / Transformer Location
◯	Tentative Single Line Diagram of the User's Plant
◯	Copy of forecast submitted to EWEC / EWEC's forecast showing the requested Demand attached
◯	If Embedded generation is connected, then details such as gross and net generation capacity (plant and unit wise); dispatch and operating regime and their performance and response characteristics must be declared. Plant characteristics, load models, governor and exciter characteristics, droop setting etc.
◯	Business justification paper of the requested connection, which includes Project Needs Case Supply connection options from the distribution system perspective along with the technical and financial evaluation of the options, Key risks and necessary control measures of the preferred option, CAPEX and OPEX costs of the preferred option (i.e. DISCOs share of interface), Programme delivery and cash flow profile.

10. Applicant's Information		
Contact Person:	Designation:	Tel:
Consultant:	Contractor:	Consumer:
Connection Request Submitted By (On Behalf of the Company):		
Name:	Position:	Date, Signature & Stamp

To Be Filled By TRANSCO				
1. Information provided comply with TRANSCO requirements:	◯	YES	◯	If NO, Applicant to provide more information. Please specify.
2. Estimated Connection Charges (AED):				
3. Connection Offer Date to the Applicant (once all info/requirements are met): Estimated proposed TRANSCO Connection Date for the Approved Supply Request: TRANSCO's Reference Letter to the Applicant:				
Application Verified By:	Date:			

Figure 3: Connection Application form for a Non-Embedded Customer (Electricity)

To Be Filled By the Applicant (Non-Embedded Customer)	
Application Ref. No	*same as the letter ref.no*
Application Date	*Same as the letter date*

◯	Stage 1 Connection Application	◯	Stage 2 Connection Application

Non-Embedded Customer Information	
Company Name	
Project Name	
Date the Requested Connections to be Operational	
Project Location (Approximate coordinates)	
Substation / Transformer Location inside the Project site (Approximate coordinates)	

1. Connection Details								
Connection Classification	◯	New	◯	Modification or Reinforcement of Existing Connection				
	◯	Temporary	◯	Permanent				
Connection Voltage	◯	132kV	◯	220kV	◯	400kV		
Number of Feeders Requested	◯	2	◯	3	◯	4	◯	Other (mention the number)
The number of feeders requested to the User site has been established to fulfill the security level per the USER's design requirements and the the associated risks and its impact is fully understood, acknowledged and accepted by the USER.							◯	YES
Connection Location	◯	Abu Dhabi islands' (Abu Dhabi island & vicinity, Reem, Saadiyat and Sowa)						
	◯	Eastern region	◯	Western (Gharbia) region				
	◯	Al Ain region	◯	Northern Emirates				

2. Interface with TRANSCO Network

Substation Name and Acronym*					
User shall identify the name of the TRANSCO substation they wish to connect.					
		BUILD	OWN	OPERATE	MAINTAIN
	TRANSCO	◯	◯	◯	◯
	USER	◯	◯	◯	◯

Note-1: For the assets with voltages at or above 132kV, the applicant shall confirm whether the assets required to connect to TRANSCO network are to be built, owned and operated by TRANSCO or the applicant (USER).

Note-2: Any assets to be owned, operated or maintained by TRANSCO will be required to be provided by Vendors prequalified by ADWEA and built to TRANSCO's design standards and specifications.

Note-3: Any assets forming part of TRANSCO's active transmission system will require to be owned, operated and maintained by TRANSCO.

Note-4: TRANSCO will only undertake to build the assets if reasonable time frame is provided for it to do so.

Note-5: If the user builds the asset and transfer (Through Asset Transfer Agreement for AED 1 value) to TRANSCO to Own, Operate and Maintain, then the O&M charges for the transferred assets will be charged to User.

3. Connection Compliance

The applicant shall confirm it will comply with all the requirements stated in the Statement of Connection Charging Methodology	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Electricity Transmission System Security Standard (ETSSS)	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Electricity Transmission Code (ETC)	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Metering and Data Exchange Code (MDEC).	◯	YES	◯	NO
The applicant confirms that they will undertake any studies required by TRANSCO to demonstrate compliance.	◯	YES	◯	NO

Note: If NO in any Connection Compliance, the applicant shall state all non-compliances where the requirements are not met with justifications.

4. Connection Justification

The applicant confirms that in making the application they are fully responsible for the justification of the requested connection. This includes any assets that the applicant requests TRANSCO to build, own, operate and maintain.	◯	YES	◯	NO

Note: Failure to confirm the justification will result in the rejection of the connection application.

5. Demand Forecast Requirements

Applicant confirms that the above Demand forecast data is consistent with EWEC's data (Copy of forecast submitted to EWEC / EWEC's forecast showing the requested Demand shall be attached)	◯	YES	◯	NO

Note: Failure to confirm the consistency with EWEC's Demand forecast data will result in the rejection of the connection application.

Applicant is required to provide Demand forecast data at each requested interface connection points per the Tables below

Table 1 Peak Non-Coincident Demand forecast (Peak Non-Coincident Demand is at the User Plant peak)

Connection Name/Location	Peak Non-Coincident Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

* *Requirement Year*

Table 2 Minimum Demand Forecast (Minimum Demand is at the User Plant Minimum Demand)

Connection Name/Location	Minimum Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

Table 3 Peak Coincident Demand Forecast (Peak coincident Demand is at the TRANSCO system peak)

Diversity factor applied to the peak non-coincident Demand for each interface connection point to arrive at the peak coincident Demand:

Connection Name/Location	Peak Coincident Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

* *Requirement Year*

Table 4 Demand Characteristics

Connection Name/Location	Infeed Short Circuit to TRANSCO Network	Power Factor	Demand characteristics (%)		
			Domestic	Commercial	industrial
Name					

6. USER Plant Details

Plant Status	◯	NEW	◯	EXISTING	◯	UPGRADATION	◯ DEMAND DIVERSION

Note-1: For the Existing and plant Upgradation, the details of Non-Peak, Minimum and Peak Demand of the existing plant shall be included in the Demand forecast table. The details of the existing power supply arrangement shall also be explained.

Note-2: For the Demand diversion, the details of Non-Peak, Minimum and Peak Demand of the existing plant shall be included in the Demand forecast table. The details of the existing power supply arrangement and the reason for changing the existing connection to requesting new connection shall also be explained.

Embedded Generation	◯	YES	◯	NO	

Unit Name/No	Capacity (MW)	Power Factor	Xd''
Unit 1			
Unit 2			
...			

7. Interface Connection Substation Plot and Corridors

Substation Plot and Corridors to be provided by:	◯	APPLICANT	◯	MUNICIPALITY		
If from Municipality, possibility of obtaining Municipality approval of the Proposed interface Substation Plot and access to the plot for connection:	◯	NO PROBLEM	◯	MEDIUM DIFFICULT	◯	VERY DIFFICULT

Please note difficulty in obtaining approval of the proposed substation plot and/or corridors could result a delay in meeting the timeline requirements of the supply request. In such cases, Applicant is encouraged to propose alternate substation plot locations

8. Clearances from Other Agencies

Applicant confirms that the Applicant will obtain required clearances from the following.

Environmental agency	◯	YES	◯	NO
Department of Transport	◯	YES	◯	NO
Civil Defence	◯	YES	◯	NO
Urban Planning Council	◯	YES	◯	NO
Other relevant agencies	◯	YES	◯	NO

9. Supporting Documentation Checklist

The below Documents shall be submitted along with this Connection Application.

◯	Geographical map showing the location of the User Plant
◯	Geographical map showing the location of the User Substation / Transformer Location
◯	Tentative Single Line Diagram of the User's Plant
◯	Copy of forecast submitted to EWEC / EWEC's forecast showing the requested Demand attached
◯	If Embedded generation is connected, then details such as gross and net generation capacity (plant and unit wise); dispatch and operating regime and their performance and response characteristics must be declared. Plant characteristics, load models, governor and exciter characteristics, droop setting etc.
◯	Business justification paper of the requested connection, which includes Project Needs Case Supply connection options from the distribution system perspective along with the technical and financial evaluation of the options, Key risks and necessary control measures of the preferred option, CAPEX and OPEX costs of the preferred option (i.e. DISCOs share of interface), Programme delivery and cash flow profile.

10. Applicant's Information

Contact Person:	Designation:	Tel:
Consultant:	Contractor:	Consumer:
Connection Request Submitted By (On Behalf of the Company):		
Name:	Position:	Date, Signature & Stamp

To Be Filled By TRANSCO

1. Information provided comply with TRANSCO requirements:	◯	YES	◯	If NO, Applicant to provide more information. Please specify.
2. Estimated Connection Charges (AED):				
3. Connection Offer Date to the Applicant (once all info/requirements are met): Estimated proposed TRANSCO Connection Date for the Approved Supply Request: TRANSCO's Reference Letter to the Applicant:				
Application Verified By:	Date:			

Figure 4: Connection Application for a Procurer / Generator

To Be Filled by Procurer	
Application Ref. No	*same as the letter ref.no*
Application Date	*Same as the letter date*

◯	Stage 1 Connection Application	◯	Stage 2 Connection Application

Non-Embedded Customer Information		
Company Name		
Project Name		
Early Power generation in MW & PF (if Applicable)		
Full Power generation in MW & PF		
Date the Requested Connections to be Operational	Full Power generation:	
	Early Power generation:	
Project Location (approximate coordinates)		
Substation/Transformer Location Inside the Project Site (approximate coordinates)		

1. Connection Details							
Connection Classification	◯	New	◯	Modification or Reinforcement of Existing Connection			
	◯	Temporary	◯	Permanent			
Connection Voltage	◯	132kV	◯	220kV	◯	400kV	
Number of Feeders Requested	◯	2	◯	3	◯	4	◯ Other (mention the number)
The number of feeders requested to the User site has been established to fulfill the security level per the USER's design requirements and the the associated risks and its impact is fully understood, acknowledged and accepted by the USER.	◯	YES					
Connection Location	◯	Abu Dhabi islands' (Abu Dhabi island & vicinity, Reem, Saadiyat and Sowa)					
	◯	Eastern region	◯	Western (Gharbia) region			
	◯	Al Ain region	◯	Northern Emirates			

2. Interface with TRANSCO Network					
Substation Name and Acronym*					
**User shall identify the name of the TRANSCO substation they wish to connect.*					
		BUILD	OWN	OPERATE	MAINTAIN
	TRANSCO	◯	◯	◯	◯
	USER	◯	◯	◯	◯
Note-1: For the assets with voltages at or above 132kV, the applicant shall confirm whether the assets required to connect to TRANSCO network are to be built, owned and operated by TRANSCO or the applicant (USER).					
Note-2: Any assets to be owned, operated or maintained by TRANSCO will be required to be provided by Vendors prequalified by ADWEA and built to TRANSCO's design standards and specifications.					
Note-3: Any assets forming part of TRANSCO's active transmission system will require to be owned, operated and maintained by TRANSCO.					
Note-4: TRANSCO will only undertake to build the assets if reasonable time frame is provided for it to do so.					
Note-5: If the user builds the asset and transfer (Through Asset Transfer Agreement for AED 1 value) to TRANSCO to Own, Operate and Maintain, then the O&M charges for the transferred assets will be charged to User.					

3. Connection Compliance				
The applicant shall confirm it will comply with all the requirements stated in the Statement of Connection Charging Methodology	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Electricity Transmission System Security Standard (ETSSS)	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Electricity Transmission Code (ETC)	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Metering and Data Exchange Code (MDEC).	◯	YES	◯	NO
The applicant confirms that they will undertake any studies required by TRANSCO to demonstrate compliance.	◯	YES	◯	NO
Note: If NO in any Connection Compliance, the applicant shall state all non-compliances where the requirements are not met with justifications.				

4. Connection Justification				
The applicant confirms that in making the application they are fully responsible for the justification of the requested connection. This includes any assets that the applicant requests TRANSCO to build, own, operate and maintain.	◯	YES	◯	NO
Note: Failure to confirm the justification will result in the rejection of the connection application.				

5. Demand Forecast Requirements

Applicant confirms that the above demand forecast data is consistent with EWEC's data (Copy of forecast submitted to EWEC / EWEC's forecast showing the requested Demand shall be attached)	◯	YES	◯	NO

Note: Failure to confirm the consistency with EWEC's Demand forecast data will result in the rejection of the connection application.

Applicant is required to provide Demand forecast data at each requested interface connection points per the Tables below

Table 1 Demand forecast

Load Description	Peak Non-Coincident Demand (MW, MVA)	Peak Coincident Demand (MW, MVA)	Minimum Demand (MW, MVA)
Power auxiliary			
Water auxiliary			
Desal			
...			

6. USER Plant Details

Plant Status	◯	NEW	◯	EXISTING	◯	UPGRADATION

Note-1: For the Existing and plant Upgradation, the details of Non-Peak, Minimum and Peak Demand of the existing plant shall be included in the Demand forecast table. The details of the existing power supply arrangement shall also be explained.

Table 1 Generator Details

Unit Name/No	Unit Type (GT/ST)	Fuel Type	Gross Capacity (MW)	Net Capacity (MW)	Stable Technical Minimum (MW)	Unit Ramp Rate (MW/minute)
Unit 1						
Unit 2						
...						

7. Interface Connection Substation Plot and Corridors

Substation Plot and Corridors to be provided by:	◯	APPLICANT	◯	MUNICIPALITY		
If from Municipality, possibility of obtaining Municipality approval of the Proposed interface Substation Plot and access to the plot for connection:	◯	NO PROBLEM	◯	MEDIUM DIFFICULT	◯	VERY DIFFICULT

Please note difficulty in obtaining approval of the proposed substation plot and/or corridors could result a delay in meeting the timeline requirements of the supply request. In such cases, Applicant is encouraged to propose alternate substation plot locations

8. Clearances from Other Agencies

Applicant confirms that the Applicant will obtain required clearances from the following.

Environmental agency	◯	YES	◯	NO
Department of Transport	◯	YES	◯	NO
Civil Defence	◯	YES	◯	NO
Urban Planning Council	◯	YES	◯	NO
Other relevant agencies	◯	YES	◯	NO

9. Supporting Documentation Checklist

The below Documents shall be submitted along with this Connection Application.

◯	Geographical map showing the location of the User Plant
◯	Geographical map showing the location of the User Substation / Transformer Location
◯	Tentative Single Line Diagram of the User's Plant
◯	Copy of forecast submitted to EWEC / EWEC's forecast showing the requested Demand attached
◯	Generator details such as gross and net generation capacity (plant and unit wise); dispatch and operating regime and their performance and response characteristics must be declared. Plant characteristics, load models, governor and exciter characteristics, droop setting etc.
◯	Business justification paper of the requested connection, which includes Project Needs Case Supply connection options from the distribution system perspective along with the technical and financial evaluation of the options, Key risks and necessary control measures of the preferred option, CAPEX and OPEX costs of the preferred option, Programme delivery and cash flow profile.

10. Applicant's Information

Contact Person:	Designation:	Tel:
Consultant:	Contractor:	Consumer:
Connection Request Submitted By (On Behalf of the Company):		
Name:	Position:	Date, Signature & Stamp ◯

To Be Filled By TRANSCO				
1. Information provided comply with TRANSCO requirements:	◯	YES	◯	If NO, Applicant to provide more information. Please specify.
2. Estimated Connection Charges (AED):				
3. Connection Offer Date to the Applicant (once all info/requirements are met): Estimated proposed TRANSCO Connection Date for the Approved Supply Request: TRANSCO's Reference Letter to the Applicant:				
Application Verified By:	Date:			

Figure 5: Connection Application for a Self-Supply Customer

To Be Filled By the Applicant (Self-Supply Customer)	
Application Ref. No	*same as the letter ref.no*
Application Date	*Same as the letter date*

◯	Stage 1 Connection Application	◯	Stage 2 Connection Application

Non-Embedded Customer Information	
Company Name	
Project Name	
Date the Requested Connections to be Operational	
Project Location (Approximate coordinates)	
Substation / Transformer Location inside the Project site (Approximate coordinates)	

1. Connection Details							
Connection Classification	◯	New	◯	Modification or Reinforcement of Existing Connection			
	◯	Temporary	◯	Permanent			
Connection Voltage	◯	132kV	◯	220kV	◯	400kV	
Number of Feeders Requested	◯	2	◯	3	◯	4	◯ Other (mention the number)
The number of feeders requested to the User site has been established to fulfill the security level per the USER's design requirements and the the associated risks and its impact is fully understood, acknowledged and accepted by the USER.							◯ YES
Connection Location	◯	Abu Dhabi islands' (Abu Dhabi island & vicinity, Reem, Saadiyat and Sowa)					
	◯	Eastern region	◯	Western (Gharbia) region			
	◯	Al Ain region	◯	Northern Emirates			

2. Interface with TRANSCO Network

Substation Name and Acronym*

**User shall identify the name of the TRANSCO substation they wish to connect.*

		BUILD	OWN	OPERATE	MAINTAIN
	TRANSCO	◯	◯	◯	◯
	USER	◯	◯	◯	◯

Note-1: For the assets with voltages at or above 132kV, the applicant shall confirm whether the assets required to connect to TRANSCO network are to be built, owned and operated by TRANSCO or the applicant (USER).

Note-2: Any assets to be owned, operated or maintained by TRANSCO will be required to be provided by Vendors prequalified by ADWEA and built to TRANSCO's design standards and specifications.

Note-3: Any assets forming part of TRANSCO's active transmission system will require to be owned, operated and maintained by TRANSCO.

Note-4: TRANSCO will only undertake to build the assets if reasonable time frame is provided for it to do so.

Note-5: If the user builds the asset and transfer (Through Asset Transfer Agreement for AED 1 value) to TRANSCO to Own, Operate and Maintain, then the O&M charges for the transferred assets will be charged to User.

3. Connection Compliance

The applicant shall confirm it will comply with all the requirements stated in the Statement of Connection Charging Methodology	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Electricity Transmission System Security Standard (ETSSS)	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Electricity Transmission Code (ETC)	◯	YES	◯	NO
The applicant shall confirm it will fully comply with the technical and connection requirements set out in the latest Metering and Data Exchange Code (MDEC).	◯	YES	◯	NO
The applicant confirms that they will undertake any studies required by TRANSCO to demonstrate compliance.	◯	YES	◯	NO

Note: If NO in any Connection Compliance, the applicant shall state all non-compliances where the requirements are not met with justifications.

4. Connection Justification

The applicant confirms that in making the application they are fully responsible for the justification of the requested connection. This includes any assets that the applicant requests TRANSCO to build, own, operate and maintain.	◯	YES	◯	NO

Note: Failure to confirm the justification will result in the rejection of the connection application.

5. Demand Forecast Requirements (from the Interface point)

Applicant confirms that the above demand forecast data is consistent with EWEC's data (Copy of forecast submitted to EWEC / EWEC's forecast showing the requested Demand shall be attached)	◯	YES	◯	NO

Note: Failure to confirm the consistency with EWEC's Demand forecast data will result in the rejection of the connection application.

Applicant is required to provide Demand forecast data at each requested interface connection points per the Tables below

Table 1 Peak Non-Coincident Demand forecast (Peak Non-Coincident Demand is at the User Plant peak)

Connection Name/Location	Peak Non-Coincident Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

Table 2 Minimum Demand Forecast (Minimum Demand is at the User Plant Minimum Demand)

Connection Name/Location	Minimum Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

Table 3 Peak Coincident Demand Forecast (Peak coincident Demand is at the TRANSCO system peak)

Diversity factor applied to the peak non-coincident Demand for each interface connection point to arrive at the peak coincident Demand:

Connection Name/Location	Peak Coincident Demand (in MVA)								
	Yr*	Yr+1	Yr+2	Yr+3	Yr+4	Yr+5	Yr+6	Yr+7	Final
Name									

Table 4 Demand Characteristics

Connection Name/Location	Infeed Short Circuit to TRANSCO Network	Power Factor	Demand characteristics (%)		
			Domestic	Commercial	industrial
Name					

6. USER Plant Details

Plant Status	◯	NEW	◯	EXISTING	◯	UPGRADATION

Note-1: For the Existing and plant Upgradation, the details of Non-Peak, Minimum and Peak Demand of the existing plant shall be included in the Demand forecast table. The details of the existing power supply arrangement shall also be explained.

Table-5 Generator Details

Unit Name/No	Unit Type (GT/ST)	Fuel Type	Gross Capacity (MW)	Net Capacity (MW)	Stable Technical Minimum (MW)	Unit Ramp Rate (MW/minute)
Unit 1						
Unit 2						
...						

7. Generation and Demand Monthly Forecast Requirements

Applicant confirms that the above Generation forecast data is consistent with EWEC's data (Copy of forecast submitted to EWEC / EWEC's forecast showing the requested generation shall be attached)	◯	YES	◯	NO

Note: Failure to confirm the consistency with EWEC's Demand forecast data will result in the rejection of the connection application.

Applicant is required to provide generation forecast data at each requested interface connection points per the Tables below

Table 6 Maximum Generation Forecast

Connection Name/Location	Peak Non-Coincident Demand (in MW)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Name												

Table 7 Minimum Generation Forecast

Connection Name/Location	Peak Non-Coincident Demand (in MW)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Name												

Table 8 Maximum Demand Forecast

Connection Name/Location	Peak Non-Coincident Demand (in MW)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Name												

Table 9 Minimum Demand Forecast

Connection Name/Location	Peak Non-Coincident Demand (in MW)											
	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Name												

8. Interface Connection Substation Plot and Corridors

Substation Plot and Corridors to be provided by:	◯	APPLICANT	◯	MUNICIPALITY		
If from Municipality, possibility of obtaining Municipality approval of the Proposed interface Substation Plot and access to the plot for connection:	◯	NO PROBLEM	◯	MEDIUM DIFFICULT	◯	VERY DIFFICULT

Please note difficulty in obtaining approval of the proposed substation plot and/or corridors could result a delay in meeting the timeline requirements of the supply request. In such cases, Applicant is encouraged to propose alternate substation plot locations

9. Clearances from Other Agencies

Applicant confirms that the Applicant will obtain required clearances from the following.

Environmental agency	◯	YES	◯	NO
Department of Transport	◯	YES	◯	NO
Civil Defence	◯	YES	◯	NO
Urban Planning Council	◯	YES	◯	NO
Other relevant agencies	◯	YES	◯	NO

10. Supporting Documentation Checklist	
The below Documents shall be submitted along with this Connection Application.	
◯	Geographical map showing the location of the User Plant
◯	Geographical map showing the location of the User Substation / Transformer Location
◯	Tentative Single Line Diagram of the User's Plant
◯	Copy of forecast submitted to EWEC / EWEC's forecast showing the requested Demand attached
◯	For Generators, details such as gross and net generation capacity (plant and unit wise); dispatch and operating regime and their performance and response characteristics must be declared. Plant characteristics, load models, governor and exciter characteristics, droop setting etc.
◯	Business justification paper of the requested connection, which includes Project Needs Case Supply connection options from the distribution system perspective along with the technical and financial evaluation of the options, Key risks and necessary control measures of the preferred option, CAPEX and OPEX costs of the preferred option, Programme delivery and cash flow profile.

11. Applicant's Information		
Contact Person:	Designation:	Tel:
Consultant:	Contractor:	Consumer:
Connection Request Submitted By (On Behalf of the Company):		
Name:	Position:	Date, Signature & Stamp ◯

To Be Filled By TRANSCO				
1. Information provided comply with TRANSCO requirements:	◯	YES	◯	If NO, Applicant to provide more information. Please specify.
2. Estimated Connection Charges (AED):				
3. Connection Offer Date to the Applicant (once all info/requirements are met): Estimated proposed TRANSCO Connection Date for the Approved Supply Request: TRANSCO's Reference Letter to the Applicant:				
Application Verified By:	Date:			

Figure 6: Connection Application Form for a Distribution Company (Water)

Form 1

Application for connection to Transco Existing Network

To Be Filled by the Company (User)				
Connection requested by (Name of company):				
Application Date:	Application letter ref. no.:			
Date of required connection to be operational:	Location/Area:			
Precise point of connection: (Chainage/Coordinates/Existing features)				
Attached reference drawing Nos.:				
Existing equipment at connection point (and nearest valve location):				
Connection material (DI/CS/GRP/PVC/HDPE); Size/Diameter; Rating	Mat:	DN:	PN:	
Connection type:		Temporary		Permanent
		Te reservoir		To consumer network
Required attachments:		Steady state study		EPANET model files (EPS)
Daily average demend requirements (MIGD):		Year		Year
		Initial demand		Full demand
Diurnal demand and pressure requiremnts:	Minimum	Maximum	Minimum	Maximum
Hourly demand (m^3/hr)				
Required pressure at connecting point (Barg):				
Allowable surge pressures at connection point (Barg):	Minimum		Maximum	
Contact person:	Designation:		Tel:	
Consultant:	Contractor:			
Connection request submitted by (on behalf of the company): Name: Position: Date, Signature & Stamp: ◯				

To Be Filled by Transco Asset Information & Standards Department	
1. Information provided is correct as per Transco record	Remarks:
2. Following information do not match with Transco record	
3. User to provide field verification	
Connection charges, AED	Use of system charges, AED
Application verified by:	Date:

Figure 7a: Connection Application form for a Procurer / Producer (Water)

Form 3

Application for Connection to TRANSCO Network (Entry Point)

To Be Filled By Applicant				
A. Application Details				
A1. Connection Requested By (Name of Company):				
A2. Date of Application (1st Submittal):			A3. Application Letter Ref No:	
Date of Current Application:	A4. Rev #:		Application Letter Ref No:	
B. Applicant Representative's Information				
Contact Person Name:	Designation:	Contact Number:	Signature & Stamp:	
C. Connection Application Form Filled by (On Behalf of the Applicant)				
Name of the Company:	Contact Person Name:	Designation:		
Contact Number:	Date:	Singature & Stamp:		
D. Production & Despatch Capacity of New Plant & Complex Site				
D1. Water Production Phases (if applicable) of New Plant (MIGD)	Year:		Year:	
	Initial Capacity:		Full Capacity:	
Description	Year	Year	Year	Year
D2. Total Despatch Capacity of Complex Site (MIGD)				
E. Water Flow and Head at this Connection Point (Fill-in one form per connection in case of multiple connections)				
E1. Date of Required Connection To Be Operational:				
E2. Water Flow (MIGD)	Minimum:		Maximum:	
E3. Head (m ADD)	Minimum:		Maximum:	
F. Connection Details				
F1. Location/Area:	Precise Point of Connection (Coordinates):			
F2. Attached Reference Drawing Nos:				
F3. Description of battery limit of IWP or IWPP Contract:				
F4. Connection Material: (DI/CS/HDPE/GRP/GRE)	F5. Diameter (mm):	F6. PN Rating:		
F7. Attachments Included in this Application Form	◯ Business Case	◯ Undertaking Letter		
	◯ Steady State Study	◯ EPANET or WANDA Model Files		

To Be Filled By TRANSCO (WNPDD):				
G1. Allowable Surge Pressure (Barg)	Minimum:		Maximum:	
G2. Required Disinfection Chemical				
G3. Required disinfection level (ppm)	Minimum:		Maximum:	
Connection Fees and Charges will be levied as per the approved statement of Connection Charging Methodology. Reference is made to TRANSCO procedure no. OP-AM-WA-54 for the details of payment terms of connection fees and annual charges.				

Figure 8b: Connection Application form for a Procurer / Producer (Water)

Guide in accomplishing the Connection Application Form:	
Item Code	Explanation of the data field requested
A1	The entities connected to TRANSCO water network at the Transmission Entry Point (EWEC or a holder of a desalination license)
A2	The date when the first application is officially submitted to TRANSCO by Applicant
A3	The ref. no. of Applicant letter by which the Application is officially submitted to TRANSCO
A4	The revision no. of current Application for the Connection Point
B	The details related to the contact person, who represents Applicant and has the authority to sign the Connection Application Form, such as name, designation in the organization, contact no.
C	The details related to the company, which represents Applicant and has the authority to sign the Connection Application Form if it is filled by such company.
D1	The phases of water production capacity of the new plant, if applicable
D2	The maximum water quantity that, at any given time, needs to be evacuated from a site considering all available production at that site [existing and new production].
E1	The date when the connection is required to be operational. Please note that prior to commissioning of connection point, the following shall be achieved; otherwise, the physical connection will not be opened on the required date of connection operation: 1. All required documents and studies are fulfilled and accepted by TRANSCO. 2. Provide TRANSCO with the offtake agreement with EWEC and/or water producer's license. 3. Connection and Interface Agreement is signed by Applicant and TRANSCO
E2	Design flow of the connection point.
E3	Design head of the connection point expressed in meters above Abu Dhabi datum.
F1	The location or geographical area of the connection point.
F2	A clear location plan drawing showing the proposed connection point.
F3	Description for the boundaries or limits of scope of works that to be included in the construction project of IWPP or IWP
F4	The material type of the connecting pipe. This includes ductile iron (DI), carbon steel (CS), high-density polyethylene (HDPE), Glass fiber Reinforced Plastic (GRP), glass reinforced epoxy (GRE) or others.
F5	The diameter of the connecting pipe in millimeter.
F6	The pipe rating of the connecting pipe. If the rating of the pipes between upstream and downstream of the interface control valve are different, indicate the pipe rating downstream of the interface control valve.
F7	Alongside Application Form, the following to be provided: 1. Business Case including optioneering study and drawings to select the best option 2. Undertaking Letter (as per the format available with TRANSCO) from Applicant pledging his commitment to pay the costs of actual services/works performed by TRANSCO internally & externally during the period from the date of Notice of Intent letter and ending upon Commercial Operation Date 3. Steady state study including softcopy of the hydraulic models
G1	The minimum and maximum allowable surge pressure at the upstream end of the interface point.
G2	The required disinfection chemical as per regulation (e.g. hypochlorination, chlorine dioxide, etc.)
G3	The minimum and maximum levels (ppm) of diinfection chemicals that are required by TRANSCO

Appendix 7: Business Case Justification - Outline Contents

The detail presented in this Appendix is requested so that TRANSCO may have certainty that all other options that may more economically address an Applicant's need for electricity or water rather than a transmission connection have been considered prior to making an application. In addition, confirmation that the connection capacity requested has a high probability of being released within a reasonable period.

For an application to connect to be assessed as to its overall sector efficiency the Applicant is required to demonstrate that all other options that may exist to address the electricity or water needs of the Applicant have been fully considered.

In developing the Business Case template, we have as far as able sought to reflect the requirements proposed by the DoE.

1. **Project Title**

   We are expecting to evidence a project title that may be used to uniquely identify the Connection Application, and which provides meaningful detail as to the general location and connection capacity.

   The Applicant should separately identify a unique reference number which may be used by TRANSCO to assist with correspondence exchange.

2. **Location**

   The Applicant should identify the general geographic location required for a transmission connection. We also expect that grid coordinates will be provided to ensure avoid any ambiguity. In addition, we will also require a geographical diagram 1:250 scale indicating the approximate location for Applicants connection assets.

3. **Connection Classification**

   The Applicant should advise as to the form and capacity of connection being requested. Where the connection is below a level of security as defined in sector codes then the Applicant should make a specific reference to such a connection being acceptable to them subject to TRANSCO's agreement.

4. **Estimated Date of Energisation**

   An estimated date of energisation should be identified.

5. **Project Drivers/Need**

   The Applicant should set out in enough detail information that will permit TRANSCO to understand the reason for the Connection Application having been submitted.

   We expect that this will include reference to the primary and secondary business needs.

   In so describing we expect that the Applicant will clearly highlight why a connection to the water or electricity transmission system is preferable as opposed to a connection from the distribution system or additional investment in the distribution system. The Applicant will be required to support their submission with financial and technical detail. Such detail will demonstrate a transmission connection is the most long-term economically efficient investment or is technically justified.

   In submitting we expect the Applicant will refer to any relevant transmission code or security standard.

6. **Demand forecast**

   An important element of the Applicant's submission will be a 10-year Demand forecast. That forecast will need to be accompanied by an explanation that details the basis and assumptions upon which the forecast has been compiled and an estimated percentage of accuracy.

   It is likely that where the Demand forecast is at variance to TRANSCO's expectation for such a connection, or local knowledge of developments in the general area, that further justification from external parties may be required.

   The forecast should be presented in; MW and MWh or MIGD and MIG, dependent upon the nature of the connection being sought.

7. **Risks**

   The Applicant should in tendering the submission estimate the risk associated with each alternative option that has been considered in arriving at the conclusion that a transmission connection is a viable and preferred option.

8. **Data Submission Requirements - Outline Feasibility Assessment**

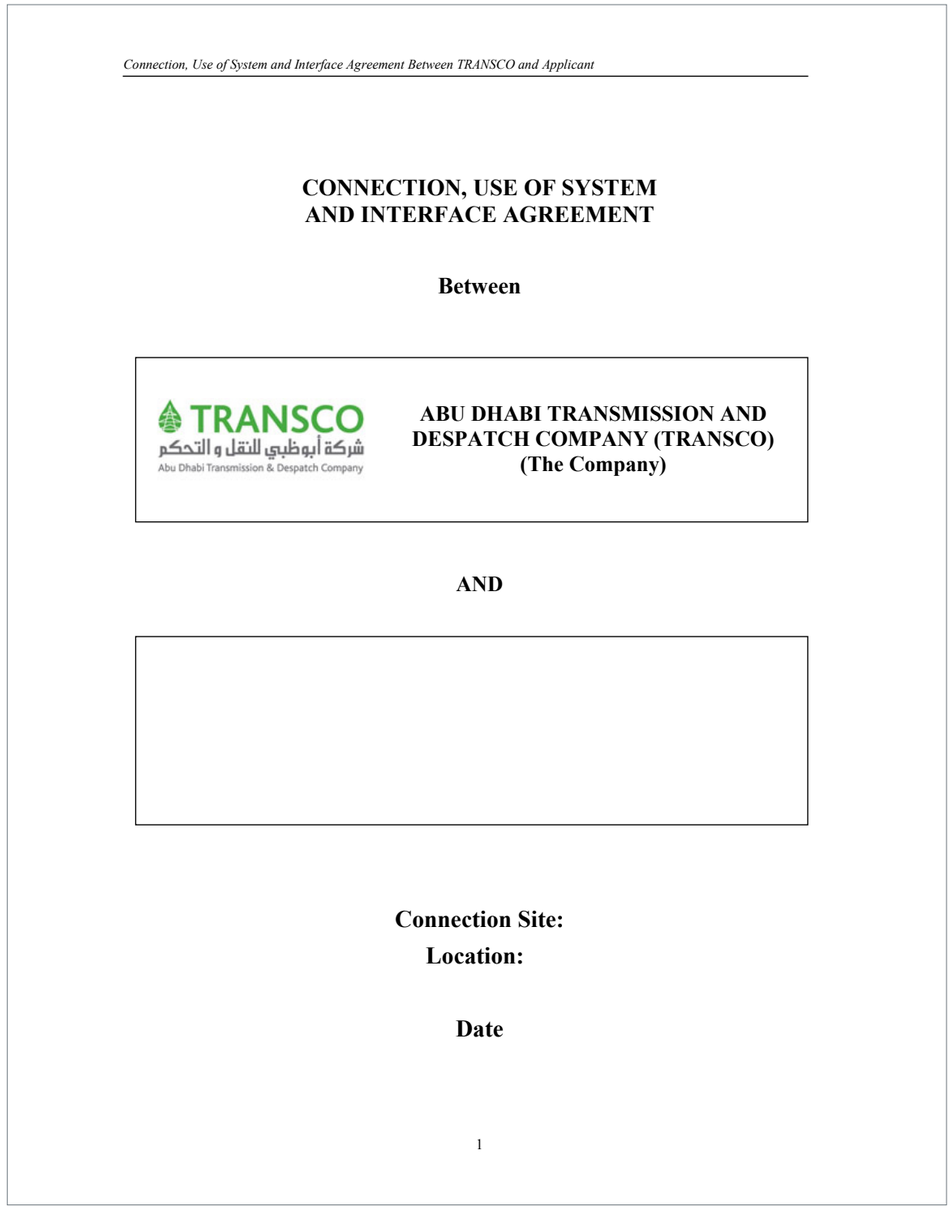
   The data requirement from an Applicant seeking an outline feasibility assessment is detailed in the Connection Application Form appropriate to a specific customer type. Where the Applicant at the time of submission is not in possession of such detail then a clear statement should be made to that effect. Upon receipt of the submission TRANSCO may need to contact the Applicant to advise if the detail provided is sufficient to permit TRANSCO to proceed with the work required to be undertaken.

9. **Data Submission Requirements - Detailed Feasibility Assessment**

   The data requirement from an Applicant seeking a detailed feasibility assessment is presented in the Connection Application Form appropriate to a specific customer type.

Appendix 8: Connection and Interface Agreement

A copy of the Standard Terms and Conditions as relate to the Connection and Interface Agreement is available for download from the TRANSCO website: www.transco.ae



Connection, Use of System and Interface Agreement Between TRANSCO and Applicant

CONNECTION, USE OF SYSTEM AND INTERFACE AGREEMENT

Between

TRANSCO
شركة أبوظبي للنقل و التحكم
Abu Dhabi Transmission & Despatch Company

ABU DHABI TRANSMISSION AND DESPATCH COMPANY (TRANSCO) (The Company)

AND

Connection Site:
Location:

Date

1

Appendix 9: Connection Application and Offer Process Flow Chart

The process for submitting an application to TRANSCO for connection to the transmission system is presented in Figure 9 below.

Figure 9: Connection Application and Offer Process Flow Chart

The first part of the process flow chart provides the sequence of tasks related to submission of a valid Connection Application sufficiently complete for TRANSCO to proceed with developing a Connection Offer.

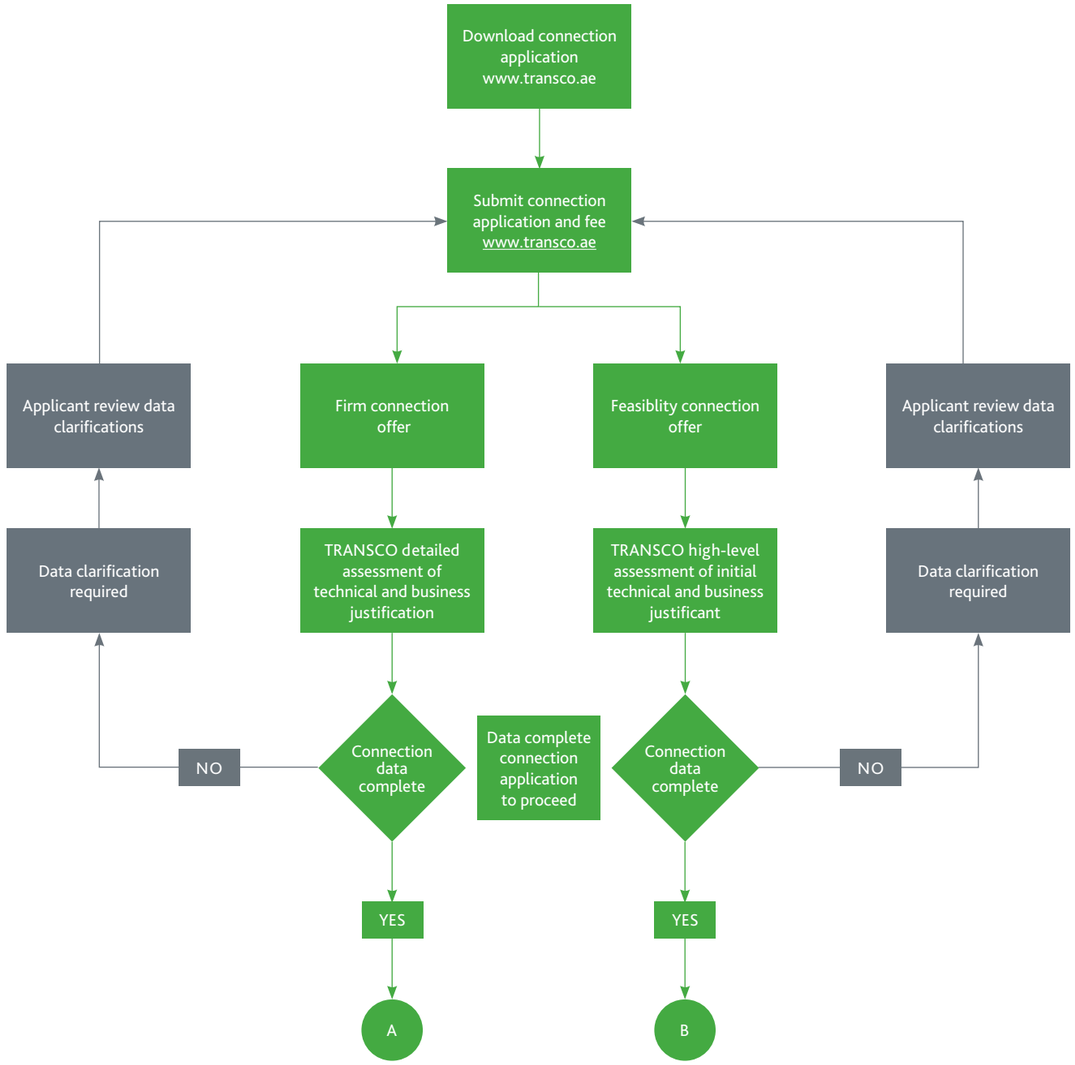


Figure 10 (Continued): Connection Application and Offer Process Flow Chart

The previous process flow presented the initial engagement between an Applicant and TRANSCO that resulted in information to TRANSCO sufficient to support more detailed working. The activities following receipt of sufficient information are shown in the process flow detailed below.

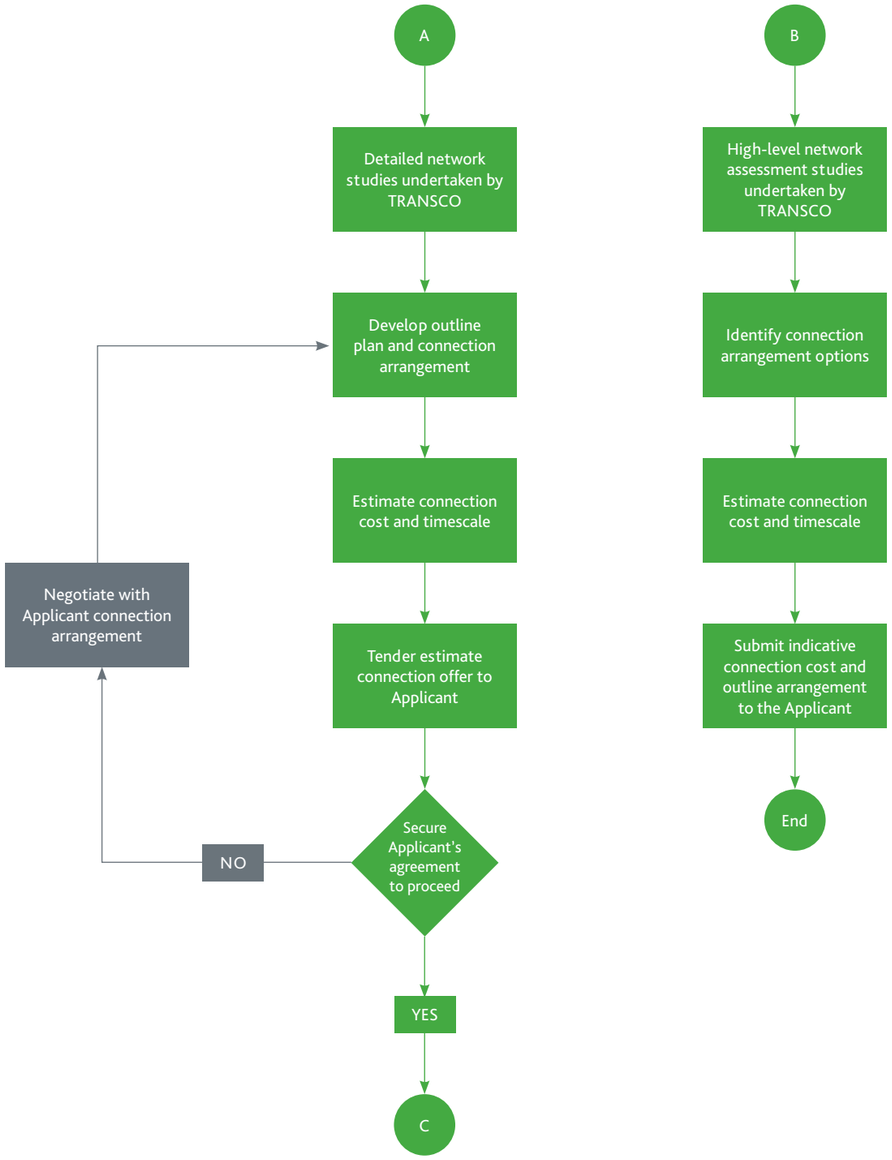


Figure 10 (Continued): Connection Application and Offer Process Flow Chart

Once agreement to the Connection Offer has been received TRANSCO will on behalf of the Applicant start to incur costs that will be charged to the Applicant as part of a Connection Charge. Should the Applicant notify us that the connection is no longer required we will confirm any payment outstanding. The activities involved in detailed design and contractor award are presented below.

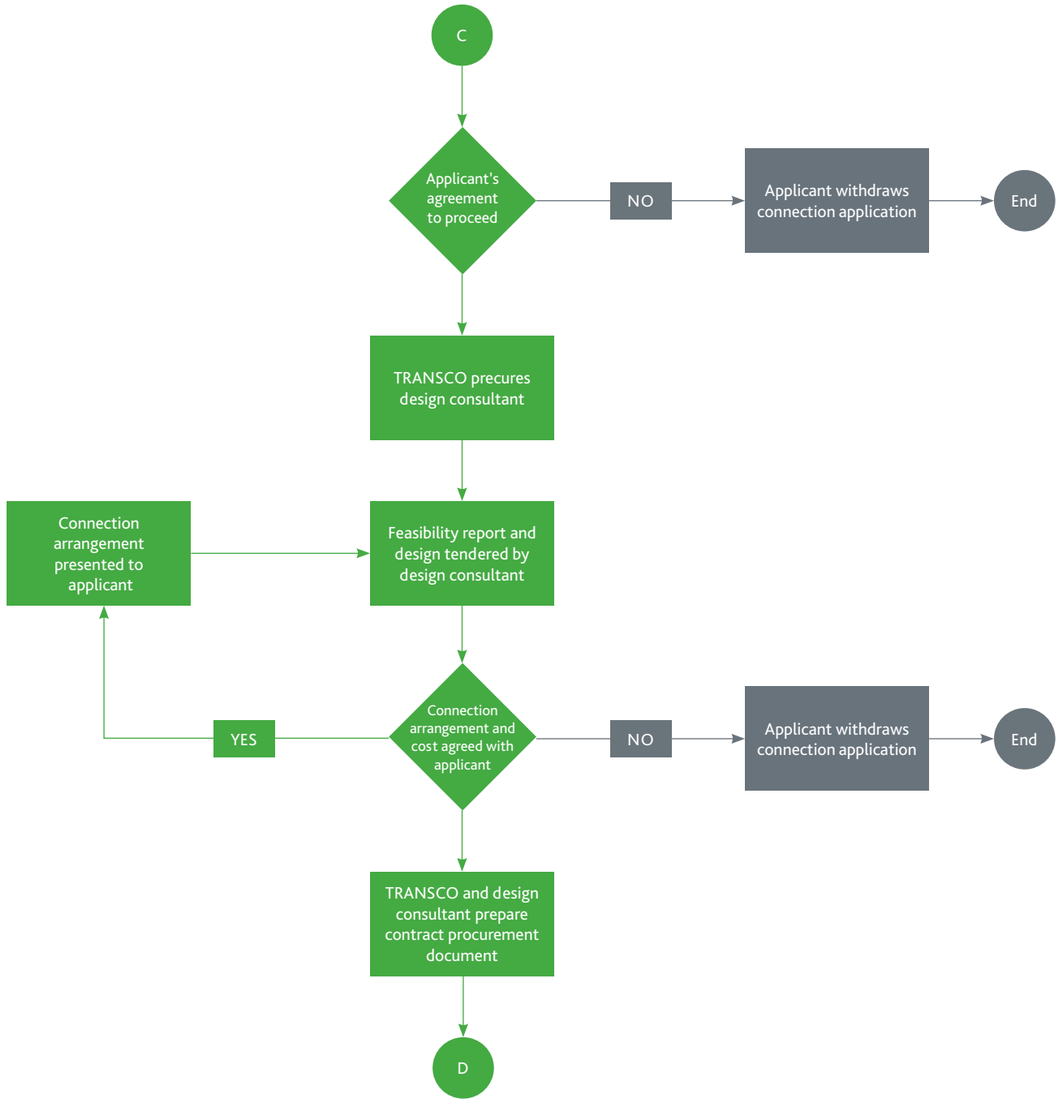
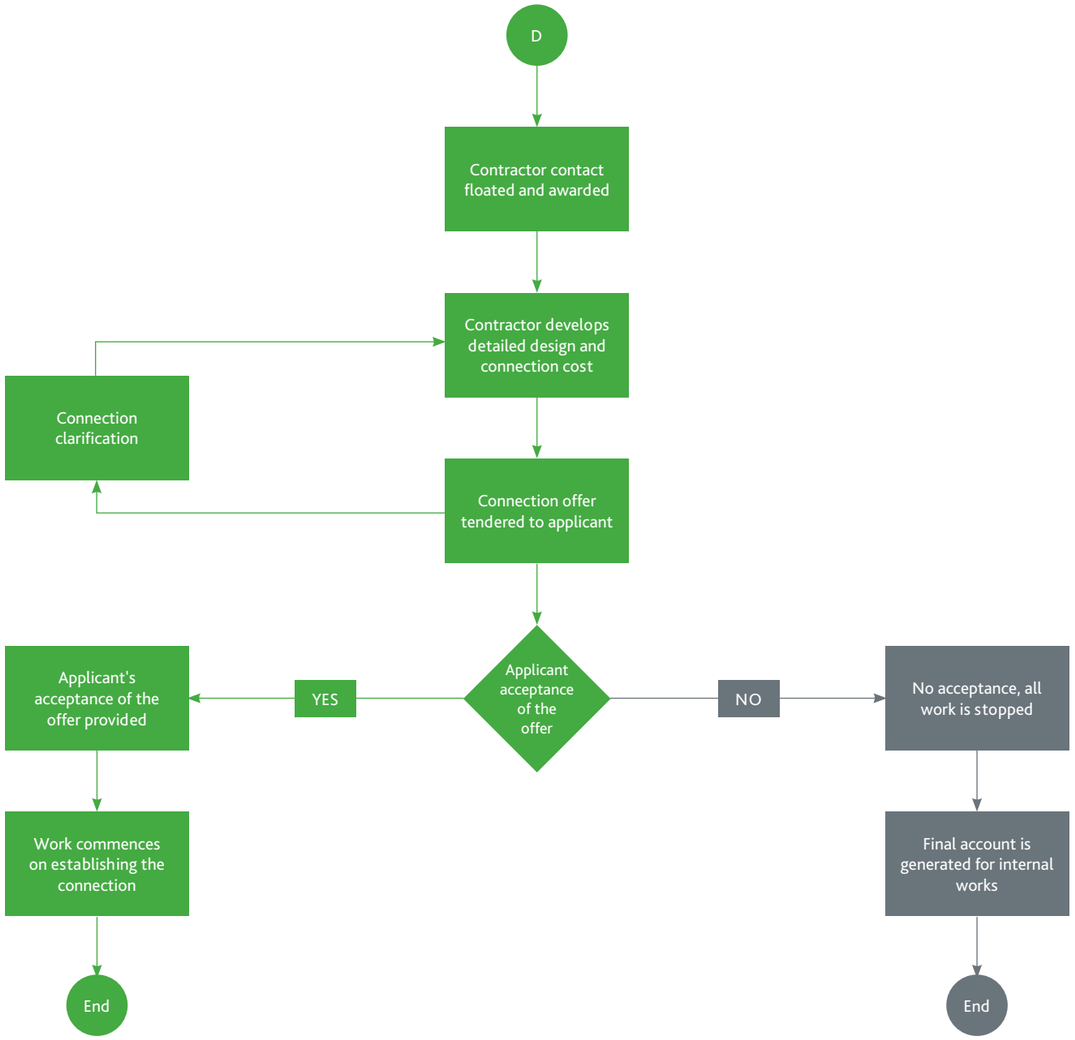


Figure 10 (Continued): Connection Application and Offer Process Flow Chart

The following tasks are related to appointment of a contractor and delivery consultant needed to construct and supervise delivery. It is at this stage in the connection process that significant costs are incurred by us on behalf of the Applicant.



Appendix 10: Summary of Connection Fees

This Appendix presents the fees that will be required in order for TRANSCO to commence processing a Connection Offer.

In order to ensure that Applicants or Customers seeking to connect to or modify an existing connection do not impose costs on other Customers, TRANSCO has agreed with the DoE a set of charges that it is allowed to charge ahead of any Connection Offer work commencing.

The Application fees are not an additional cost and will be reimbursed to the Applicant or Customer should they decide to proceed with a new connection or modification. In respect to a charge levied for an optioneering assessment an element of that work relating to the agreed option, will be repaid if the assessment later results in a formal application for connection or modification.

Table 13: Application Fees (AED)

Application Type	Application Fee (AED)
New Application - Generation	200,000
New Application - Demand	150,000
Modification - Generation	100,000
Modification - Demand	75,000

If a Customer or Applicant wishes TRANSCO to assess several connection options before formally applying, TRANSCO will carry out feasibility studies at their request. These studies will be charged at the rates set out below. The charge applies to both water and electricity connections.

Table 14: Optioneering Assessment Fees (AED)

Optioneering Assessment Type	Feasibility Assessment Fee (AED)
New Application Generation (feasibility assessment purposed only)	25,000
New Application Demand (feasibility assessment purposed only)	15,000
Modification - Generation (feasibility assessment purposed only)	12,000
Modification - Demand (feasibility assessment purposed only)	7,000

About TRANSCO

Abu Dhabi Transmission and Despatch Company (TRANSCO) is responsible for the development, operations and maintenance of high-voltage power and bulk water transmission networks within Abu Dhabi and beyond. TRANSCO provides secure, sustainable, economic and reliable transmission networks that connect generation companies to distribution companies, as well as other end-users. TRANSCO is a subsidiary of Abu Dhabi National Energy Company (TAQA).

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