



وزارة الطاقة والبنية التحتية  
MINISTRY OF ENERGY & INFRASTRUCTURE

الاتحاد للماء والكهرباء  
Etihad Water & Electricity



# DISDTRBUTED SOLAR SYSTEMS CONDITIONS

## For Small-Scale Solar PV System

Version1 - September 2024



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## 1. Introduction

These Connection Conditions for Distributed Solar System (Connection Conditions) are issued by Etihad Water and Electricity (ETIHADWE) for the implementation of “Federal Decree Law No. 17 of 2022” regulating the connection of distributed renewable energy production units to the electrical grid in the United Arab Emirates.

These Connection Conditions regulating the installation of Distributed Solar System (DSS) in Northern Emirates shall come into effect as of publication on the website of Etihad Water and Electricity. These Connection Conditions form an integral part of the application for the connection of DSS and the Connection Agreement.

In the initial phase (Phase 1), implementation of the DSS in Northern Emirates will be permitted only in the following customer segments:

- Residential Local
- Industrial
- Agricultural

As and when ETIHADWE takes the decision to permit installation of DSS in other customer segments, the same will be separately notified.

## 2. Definitions

**Annual Limit** – The annual maximum aggregate capacities of all the DSS that can be approved by the Authority to be connected to the Distribution Network in any calendar year.

**Approved Contractor** – A system integrator who is qualified and authorized by ETIHADWE to perform DSS design, installation, operation, and maintenance in the Northern Emirates.

**Authority** – Etihad Water and Electricity (ETIHADWE).

**Billing Period** – The interval of time for which an electricity bill is issued by the Authority. A Billing Period is recurrent and currently has a monthly duration. The first Billing Period shall start from the Operation Date of the DSS.

**Connected Load** – the maximum power that can be drawn from the Distribution System under one Hosting Account at any point in time, as approved by the Authority.

**Connection** - Connecting the DSS to the Distribution Network.

**Connection Agreement** - The agreement concluded between the Authority and the DSS Customer, which outlines the terms and conditions for design, installing, connecting, and operating the DSS.

**Consumption Account** - The specific account for metering the electricity imported from the Distribution Network by a meter dedicated for such purpose.

**Customer Class** - The customer classification designated by Authority to customers registered for supply of electricity from Distribution Network to customer's Consumption Account

**Distribution Network** - The network comprises electrical lines (33kV and below), which are either owned or managed by the Authority and are utilized for delivering electricity up to the point where it reaches customers' premises. This network consists of all associated infrastructure and equipment,



including metering devices, which are owned or managed by the Authority in relation to electricity distribution.

**DSS** – One or more electrical energy generating units that generate electricity exclusively from Solar Energy connected under one Hosting Account.

**DSS Customer** – Any Person that generates electrical energy from DSS and connects it to the Distribution Network as per terms and conditions set forth by the Authority.

**POI:**

**Electrical Energy Export:** The electrical energy produced by the DSS Customer through the DSS and exported (active power only) to the Distribution Network under the respective Hosting Account.

**Electrical Energy Import** - The electrical energy that is consumed by the DSS Customer and supplied from the Distribution Network under the respective Consumption Account or Hosting Account as the case may be.

**Hosting Account** – The Consumption Account under which the DSS is connected.

**Maximum Capacity** - Corresponds to the sum of the maximum active power deliverable by the inverters at the AC side of the DSS.

**Operation Date** – Date on which permission to operate is granted for the installed DSS post inspection and testing after Connection.

**Person** – Natural or legal person, whether public or private.

**Premise** – A house or a plot associated with a Consumption Account of a DSS Customer wherein the DSS Customer proposes to install the DSS, for which a specific house or a plot number has been allotted by the municipality or any other competent authority concerned with licensing buildings and categorizing land uses in the Northern Emirates.

**Settlement Period** – the period of each successive period of 12 Billing Periods from the Operation Date of DSS.

**Solar Energy** – The radiant light energy emitted by the Sun.

**The Federal Decree** - Federal Decree Law No. 17 of 2022 regulating the connection of distributed renewable energy production units to the electrical grid in the United Arab Emirates



### 3. Obligations of DSS Customer for Installation of DSS

Pursuant to Article 8 of The Federal Decree and in the application of Article 5 of The Federal Decree, the DSS Customer shall adhere to the following conditions for installation of DSS:

- 1) Obtain the approval of the authorities concerned with licensing buildings and categorizing land uses in the Northern Emirates before installing DSS in any Premise and connecting it to the Distribution Network.
- 2) Rely on the Approved Contractor for design, installation, connection, operation, and maintenance of the DSS.
  - The Authority shall publish an initial list of Approved Contractor on its website, which shall be updated from time to time. This list will be referred to as the 'List of DSS Approved Contractors.'
  - It's important to note that the Authority does not assume responsibility for any professional or boundary-related advice, or any other technical guidance provided by these Approved Contractors. The Authority also disclaims any liability for injuries, damages, losses, subpar designs, construction, installation, delays, or any adverse outcomes resulting from the services provided by the Approved Contractors.
- 3) Comply with all the requirements necessary to install the DSS and connect it to the Distribution Network according to the specifications, including security and safety requirements and requirements relating to electrical energy measuring devices. In this regard, DSS Customer shall consider and whenever required comply with all the instructions, guidelines, and standards outlined in all the documents listed in Annexure 1 to the Connection Conditions.
- 4) DSS Customer shall ensure that all the DSS equipment is compliant with the requirements set forth by the Authority's standards.
  - The information available on the Authority's website shall specify the criteria for eligible DSS equipment and shall also provide a non-exhaustive list of equipment eligible for DSS installation, offering an overview of manufacturers and equipment that adhere to Authority's technical standards.
  - However, it's important to note that this information does not imply or guarantee any form of endorsement, whether explicit, implicit, or mandated by law. This includes, but is not limited to, warranties related to title, merchantability, satisfactory quality, fitness for a specific purpose, performance assurances, professional advice, or financial guidance. It should not be the sole basis for making purchasing, contractual, investment decisions, or entering into other legally binding agreements.
- 5) Obtain approval from the Authority for the production of electric energy through DSS in accordance with the established Connection process and legislation.
- 6) Comply with the terms of the Connection Agreement and all the requirements and regulations of the Connection and any other conditions set forth by the Authority.
- 7) Comply with the Maximum Capacity for electric power to be produced and exported to the Distribution Network.
- 8) Comply with the safety standards as set forth by the Authority.
- 9) Cooperate with the Authority in everything related to the provisions of this Connection Conditions and the local legislation in force.
- 10) Preserve the environment, public health, and safety in accordance with the requirements of the legislation in force and as required by the Authority.
- 11) Payment of fees and costs in relation to connection of the DSS as imposed by the Authority.
- 12) The DSS must be installed exclusively within the Premise where the Hosting Account is situated. DSS should be set up only on rooftops.



#### 4. Maximum Capacity Limit for DSS Installation

A customer who intends to install and connect the DSS installation to the Distribution Network shall comply with the Maximum Capacity allowed for the DSS. The Maximum Capacity of DSS shall be limited by Connected Load of the respective Hosting Account multiplied by the percentage factor as detailed below for each Customer Class:

Customer Class	Percentage Factor
Resident Local	10%
Industry <sup>1</sup>	10%
Agriculture	10%

The Maximum Capacity for DSS that can be connected to the Distributed Network by the DSS Customer cannot exceed 1,000 kW.

The Authority may revise these allowed Maximum Capacity limits at its discretion.

#### 5. Electricity Metering

The smart metering system shall comprise two components: the Main Energy Meter and the DSS Energy Meter.

- The Main Energy Meter measures the electricity consumption from the grid to the customer's load. On the other hand, the DSS Meter measures the energy generated by the solar system and exported 100% to the grid. The Point of Interconnection (POI) will be located after the Main Energy Meter from the customer's side, before the Main Energy Meter from the grid's side.
- Both the Main Energy Meter and the DSS Energy Meter are required to continuously measure the quantities, display this information, and securely store it in a permanent meter register. Stored data related to measured quantities can be retrieved by ETIHADWE at any time either locally or remotely using proper communication means.

The DSS meter will be installed by EtihadWE, and the cost, including any modifications or installations related to the grid connection, will be charged to the DSS customer.

The specifications outlined in section 8 of The Electricity Wiring Regulation Book by the erstwhile Federal Electricity and Water Authority (now Etihad Water & Electricity) for existing electricity meters are also relevant to the DSS metering system.

#### 6. Invoicing

- 1) Connection of DSS: The customer connecting the DSS is required to link it to one Consumption Account, which will serve as the Hosting Account for that DSS. Any Hosting Account shall be linked to only one DSS.

<sup>1</sup> Excluding those industrial customers who benefit from a preferential discounted tariff from ETIHADWE



- Electricity production and consumption will be measured through two different meters Main Energy Meter "A" and DSS Meter "B" and the clearing process will be carried out separately from the two-meter readings monthly, one consumption "A" and the other generation "B". Net = A-B.
  - The invoice will be issued monthly by EtihadWE, with both production and consumption (kWh) details included in the monthly statement.
- 2) Specification of Hosting Account: The customer must specify the Hosting Account during the application process for DSS connection.
  - 3) The DSS Customer may request the Authority to add any new Consumption Account that the DSS Customer might come to hold within the Premise, to the order of priority of already existing Consumption Accounts relevant for offsetting purposes. The DSS Customer may also request a modification of the order of the priority of the Consumption Accounts. Once one of such modification requests is approved by the Authority in its sole discretion, any further modification cannot be requested for a period of 180 days from the date of approval.
  - 4) In the case of disconnection of the Hosting Account/termination of Connection Agreement, any remaining Available Export Credits until the date of disconnection/termination, after issuance of the final bill shall be forfeited, without any payment/offsetting obligation for the Authority.
  - 5) In case of rent or transfer of the property, a joint request from the DSS Customer and the tenant or new owner can be submitted to the Authority requesting the transfer of the DSS from the current Hosting Account to the account of the tenant or new owner. Any Available Export Credits that might be recorded for the Hosting Account will not be transferred to the account of the new tenant or owner and will be forfeited upon disconnection of the Hosting Account and issue of the final bill, without any payment/offsetting obligation for the Authority.
  - 6) In case of the Hosting Account being disconnected or termination of Connection Agreement, the Authority shall stop any import and export of electricity to/ from the Hosting Account.

## 7. Provisions Related to Renewable Generators Safety, Operation, Inspection, Maintenance, And Disposal

The safety guidelines aim to create a comprehensive framework for the safe and compliant development of DSS installations. The primary objectives are to protect the well-being of workers, occupants, and the public, while also ensuring the long-term reliability and performance of solar PV systems. Standardized safety protocols are established to promote consistency and quality across all installations, with a focus on minimizing risks to reduce the potential for accidents, injuries, and property damage. Safety requirements and guidelines are outlined in the Safety Guidelines and the Interconnection Standards & Guidelines.

Inspection and testing of DSS are required to confirm the DSS's compliance with the applicable technical standards, as outlined in section 3 of the Interconnection Standards & Guidelines. The inspection and testing of DSS will occur in two stages: before the connection to the Distribution Network, including inspections at the mechanical completion stage, and after the connection to the Distribution Network. A set of guidelines and checklists are in place and can be found in the Inspection and Testing Guidelines as well as Inspection and Testing Checklists before and after Connection.

The DSS Customer shall ensure that routine general maintenance for the DSS aligns with site conditions, occurring at least once a year, encompassing activities such as panel cleaning and any other preventive maintenance checks per the manufacturer's recommendations. Additionally, the DSS Customer shall



ensure that all critical maintenance activities, including repairs and equipment replacements, are exclusively carried out by an Approved Contractor.

## 8. DSS Operation

- 1) ETIHADWE is not responsible for any form of loss or damage, whether consequential or otherwise, suffered by the DSS Customer due to the connection or disconnection of the DSS to the Distribution Network.
- 2) ETIHADWE has the authority to disconnect a DSS from its Distribution Network for purposes associated with:
  - The maintenance of the Distribution Network.
  - Technical limitations within the Distribution Network which might temporarily prevent DSS connection.
- 3) ETIHADWE is not responsible for any generation losses incurred by the DSS Customer caused by:
  - DSS disconnection under conditions mentioned in point 2 above.
  - The DSS being tripped as a result of transient or abnormal events in the Distribution Network or any power outage event.
  - Remote signal instructions by ETIHADWE for adjusting DSS operation to meet Distribution Network requirements. This includes controlling active and reactive power and disconnecting the DSS if necessary.

## 9. Annual Limit and Connection queue

- 1) The Authority shall impose an Annual Limit which will specify the maximum cap approved each year for Connection in accordance with Article 10 of The Federal Decree.
- 2) If the Annual Limit established by the Authority is met in a given calendar year, the Authority shall still accept and authorize the Connection requests for DSS. However, such approved Connection requests can be connected to the Distribution Network only in the subsequent Calendar year. The principle of 'first come - first served' will be applied while considering Connection application.
- 3) The Authority may revise these allowed Annual Limit at its discretion.





## A. Appendix: Connection Agreement

### CONNECTION AGREEMENT

Capitalized terms used herein will have the same meaning as defined in Connection Conditions.

I/We, the undersigned, hereby:

- Apply for connection of the DSS identified above to the Authority;
- In applying for connection, specifically agree to comply with the rules and regulations specified in the Connection Agreement and Connection Conditions, and any further rules, regulations and standards that Authority may introduce from time to time;
- Understand that, in case the Authority approves the application, this Connection Agreement will form a legally binding contract between the undersigned and the Authority;
- Agree to observe and be bound to the Connection Conditions attached, and any amendment made thereto by the Authority from time to time and understand that the attached Connection Conditions form an integral part of this Connection Agreement;
- Agree to pay the connection and other charges determined by the Authority along with the value added tax as applicable;
- Agree to comply with the safety rules and regulations in installation and operation of DSS to avoid threat to people, property and environment;
- Acknowledge that in the case of risk for the safety or the security, or for maintenance of or for any technical limitation in the Distribution Network, the Authority is entitled to disconnect the DSS from the Distribution Network with immediate effect;
- Confirm that DSS is designed in a way to automatically and immediately be disconnected and isolated from the Distribution Network as required;
- Authorize the Authority to use and disclose the information related to the DSS as it may deem appropriate, in line with the Authority's security and privacy policy;
- Understand that no change can be made to the DSS affecting its design or Maximum Capacity without first receiving written approval from the Authority;
- Acknowledge that this Connection Agreement shall become effective upon receiving application approval from Authority and shall continue to remain in effect until termination. The Connection Agreement may be terminated for any of the following reasons:
  - Automatically, on the termination of the Hosting Account;
  - Transfer of property to a new tenant or a new owner;
  - The DSS Customer may terminate the Connection Agreement at any time by giving the Authority a (30) days prior written notice stating the DSS Customer's intent to terminate the Connection Agreement. In this case, the Authority will notify the DSS Customer, confirming termination will either occur (30) days after notice date on which the DSS customer has provided the notice or provide an alternate date, on which the DSS will be disconnected by the Authority;
  - All payment and financial settlement related obligations and DSS Customer's indemnity obligations shall survive termination of the Connection Agreement;
  - The Authority may terminate the Connection Agreement at any time if (a) the DSS Customer has defaulted on any terms and conditions of the Connection Agreement, and (b) the default continues beyond any cure period that the Authority may have provided the DSS Customer to rectify the default;
- Acknowledge that this Connection Agreement shall in all respects be governed and construed in accordance with the laws and regulations prevailing in the United Arab Emirates.

Signature of DSS Customer or

Company Stamp (if applicable)

Authorized Representative of DSS Customer

Name and Designation (if applicable):

.....

Date:



## B. Annexure 1 – List of Documents

The following document is available on ETIHADWE's website and the DSS Customer shall comply with the instructions, guidelines, and standards outlined in this document:

- 1) DISDTRBUTED SOLAR SYSTEMS STANDARAD AND GUIDLEINES For Small-Scale Solar PV System