

REGULATORY POLICY

FOR

LOW CARBON WATER CERTIFICATES (LCWC)



EFFECTIVE DATE: 01/04/2024



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Changes History Sheet

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1. Introduction

1.1 Purpose

The purpose of this policy is to establish a Low Carbon Water Certificate Scheme as a mechanism to give visibility and support the carbon footprint reduction of desalinated water production in Abu Dhabi.

1.2 Scope

The Water Certificate Scheme is a tracking system to reliably communicate water emissions footprint linked to the electricity consumption during the water production phase. The certificate confirm that a certain amount of water has been produced, in a given period of time, from a Reverse Osmosis production device and the electricity sourced used is clean (nuclear or renewable). Emissions related to water pumping, transmission and distribution are not covered.

1.3 Responsibility for Implementation

The Department of Energy (DoE) is responsible for implementing this policy, including issuing the Low Carbon Water Certificates (LCWC) based on reliable information on water production and electricity consumption. EWEC, as single registrant and single participant, is responsible for request and trade the LCWC. Evident I-REC(E) Registry is acting as single central registry.

1.4 References

This policy references the Clean Energy Certificates issued by the DoE in 2021, which detail the generation of electricity from clean energy resources and are associated with LCWC as part of the Water Certificate Scheme.

1.5 Distribution

Public





2. Foreword

2.1 Context and Purpose of the Regulatory Policy (“Policy”)

2.1.1 The Department of Energy (“DoE”) is established pursuant to Abu Dhabi Law No. (11) of 2018 as a policy maker and regulatory entity for the energy and water sector in the Emirate of Abu Dhabi (the “Emirate”). Key objectives of the DoE include driving the future direction of the Emirate’s Energy and Water Sectors in all its forms and to create an efficient system that enables economic growth, energy and water security and sustainable development. The DoE’s mandate includes enacting policies and regulations and developing strategies to enable an effective energy transition to ensure the Emirate’s sustainable growth while protecting consumers and the environment.

2.1.2 On 7 October 2021, the UAE announced its net zero goal to achieve climate neutrality by 2050 through an ambitious strategic initiative to reduce carbon emissions, with the goal of transforming its economy in accordance with the objectives of the Paris Agreement.

Because of this commitment and decarbonization strategies at the national level, relevant policies are being reviewed at Emirates level.

- (a) On December 2022, the DoE and EAD announced the Clean Energy Strategic Target for 2035, being set for sixty percent (60%) of electricity production in the Emirate to be generated from clean sources.
- (b) On July 2023, the Environment Agency (“EAD”), launched the Abu Dhabi Climate Change Strategy, aiming for a 22 per cent reduction in emissions by 2027 compared with 2022, by implementing 81 initiatives and 12 key projects.
- (c) In July 2021, the DoE launched the Regulatory Policy for Clean Energy Certificates. Clean energy certificates are voluntary tradeable instruments which detail and evidence the generation of a specific amount of electricity from clean energy resources and will be transferable (“Clean Energy Certificates”).



2.1.3 This Policy sets out a Low Carbon Water certificate scheme (“**Water Certificate Scheme**”) in the Emirate, as a measure to give visibility and support the carbon footprint reduction of desalinated water production and to meet the growing interest of corporate clients and households to contribute to the fight against climate change.

2.1.4 The Water Certificate Scheme is a water desalination production tracking system to reliably communicate water emissions footprint linked to the electricity consumed during its production phase.

Water desalination attributes (such as source of generation and related environmental indicators) can easily be valued and accounted, whilst also avoiding the risk of multiple counting of attributes’ benefit.

The Low Carbon Water Certificates (“**LCWC**”) provide direct ownership of the water production attributes. The accreditation confirms that a certain amount of water has been obtained, in a given period of time, from a Reverse Osmosis production device which electricity source is clean, and this source is proved and certified by a Clean Energy Certificate.

This Scheme enables the traceability of CO₂ emission free water desalinated production from the producer to the final consumer, even though water pipelines do not distinguish between different types of water origins.

2.1.5 The CO₂ emission intensity of water use is the total amount of CO₂ emissions, calculated on a whole-system basis, required for the use of a given amount of water in a specific location. This calculation can vary considerably based on the type and quality of the source of water, the pumping requirements to deliver water to end-users, the efficiency of the water system and the energy embedded by specific consumer end uses.

This Water Certificate Scheme is focused on the CO₂ emissions of the electricity consumed during the production of the desalinated water. Emissions related to water pumping, transmission and distribution are not covered.





2.1.6 This Water Certificate Scheme will allow visualizing the significant decarbonization effort that the Emirate is carrying out in the desalinated water production.

The projection of water production in the Abu Dhabi system shows that the total share of production from Reverse Osmosis technology increases from 27% in 2022 to almost 90% in 2030. Reverse Osmosis is the only technology eligible to receive Low-carbon Water Certificates.

2.1.7 This Water Certificate Scheme has been designed to leverage the already existing Clean Energy Certificate Scheme, finding synergies and efficiencies, and pursuing the principles of objectivity and non-discriminatory access to LCWC for all consumers in the Emirate.

2.1.8 Each LCWC is univocally linked to a Clean Energy Certificate. Accordingly, the purchaser of a LCWC has the same rights and obligations as the purchaser of a Clean Energy Certificate.

Likewise linking the LCWC to Clean Energy Certificate, the attribute tracking system for renewable energy certificates developed by the “International REC Standard Foundation” (“I-RECs”), is adopted.

This guarantees the independence, transparency, robustness, integrity, and international recognition of the scheme.

Clean Energy Certificates are not recommended to be used to offsetting for self-consumption. Therefore, in those configurations where a fossil fuel power plant is directly connected and feeding the Reverse Osmosis device, LCWC could not be requested to be issued.

2.1.9 The attribute tracking system for water production allows:

- (a) Accreditation of a device (“**Production Device**”) for the production of a certain amount of desalinated water in a given period of time, from a Reverse Osmosis technology whose electricity source is clean, as proved and certified by a Clean Energy Certificate issued by the DoE.





- (b) Verification by a water consumer of the amount of water that has been consumed from such clean water production sources.
- (c) Financial valuation of the Low Carbon water's attributes and potential commercialisation.

2.1.10 This attribute tracking system is complemented by a trading scheme, where water production generated from clean energy resources receive unique LCWC, which could be marketed separately from the water and acquired by consumers who wish to demonstrate their specific consumption of Low Carbon water.

2.1.11 The aim of this Policy is to set the implementation regulations for the Water Certificate Scheme.

2.2 Principles.

2.2.1 In order to ensure that LCWC are internationally recognised, LCWC are univocally linked to a Clean Energy Certificate which adopt the established attribute tracking system for renewable energy certificates developed by the "International REC Standard Foundation" ("I-RECs"), acting the DoE as I-REC local issuer ("Issuer") for the Emirate of Abu Dhabi.

2.2.2 The establishment of the Water Certificate Scheme requires the following enabling roles.

- (a) The DoE is the Issuer and responsible party authorised to issue the Water Certificates.
- (b) As each LCWC is univocally linked to an I-REC, the Evident I-REC(E) Registry is acting as single central registry for the Clean Energy Certificate associated to the LCWC.
- (c) EVIDENT Registry is acting as single central Registry for LCWC.

2.2.3 The DoE is responsible for:

- (a) Issue the LCWC based on reliable information on water production and electricity consumption.





For each water production Device, the DoE will verify the Electricity-Water Conversion Ratio (“**Electricity-Water Conversion Ratio**”) between desalinated water produced and electricity consumption during a defined period. This ratio will be updated for each LCWC requested and included in the issued certificate.

Each LCWC is univocally linked to a Clean Energy Certificate. Accordingly, the amount of water associated with the certificate will depend on the Electricity-Water Conversion Ratio and the Clean Energy Certificates available for it.

2.2.4 The Low Carbon Water Production Registry is responsible for:

- (a) Registration of Water Production Devices,
- (b) tracking LCWC ownership,
- (c) recording LCWC trading transactions,
- (d) verifying LCWC claims, and
- (e) ensuring that there is no LCWC double counting.

2.2.5 In its capacity as Issuer, the DoE is authorised to determine the fees for the issuance of LCWC, and to regulate the requirements for acquiring and trading such certificates including any prohibitions and/or restrictions to sell/acquire Certificates inside or outside the Emirate.

- (a) The validity of the LCWC is limited to within the Abu Dhabi Emirate, aligned with the limitations of the Clean Energy Certificates.
- (b) The entity acting as sole procurer of power and water within the Emirate of Abu Dhabi (EWEC) will act as a single registrant and single participant for the water produced from DoE licensed entities (“**Single Water Registrant**” and “**Single Water Participant**”).
- (c) In the case of unlicensed water production devices fed by PV or clean power plants or fed by the Abu Dhabi electricity grid, the DoE may allow other Water Registrants and Electricity/Water Participants in accordance





with terms and conditions to be decided by the DoE (“**Other Water Registrant and Other Water Participants**”).

- (d) The Single Electricity/Water Participant shall ensure that all potential beneficiaries have access to LCWC under the same conditions.
- (e) The revenues that the Single Water Registrant and the Single Electricity/Water Participant earns from the sales of LCWC shall be considered in the calculation of the Bulk Supply Tariff (BST) according to regulatory instruction, direction or guidance issued by the DoE.





3. Definitions

Save for definitions expressly given, the terms in this Policy have the meanings assigned to them by the I-REC Code and its Subsidiary Documents.

- **Low Carbon Water Certificate Scheme (Water Certification Scheme):** desalinated water production tracking system adopted in Abu Dhabi.
- **Low Carbon Water certificate (LCWC):** provide direct ownership of the water production attributes. The accreditation confirms that a certain amount of water has been obtained, in a given period of time, from a Reverse Osmosis production device which electricity source is clean, and this source is proved and certified by a Clean Energy Certificate.
- **Clean Energy Certificates** are voluntary tradeable instruments which detail and evidence the generation of a specific amount of electricity from clean energy resources and will be transferable. Clean Energy Certificate which adopt the established attribute tracking system for renewable energy certificates developed by the “International REC Standard Foundation” (“I-RECs”), acting the DoE as I-REC local issuer (“**Issuer**”) for the Emirate of Abu Dhabi.
- **Single Water Registrant:** sole person or organisation legally empowered to register a Production Device in the DoE Low Carbon Water Production Registry to receive LCWC for the desalinated water produced from DoE licensed production entities.
- **Other Water Registrant:** person or organisation legally empowered to register a Water Production Device to receive LCWC in the case of unlicensed water production devices.
- **Single Electricity/Water Participant:** sole entity holding a trading account in the I-REC Register to own Clean Energy Certificates, and to request and trade with LCWC from Licensed Water Production Devices.





- **Other Electricity/Water Participant:** person or organisation legally empowered to holding a trading account in the EVIDENT Register to own Clean Energy Certificates, and to request and trade with LCWC from unlicensed water production devices.
- **Electricity-Water Conversion Ratio:** Ratio between the electricity consumed during a defined period and the amount of desalinated water produced by a device in units of MWh/m³.
- **Low Carbon Water Production Registry** provides a fully auditable chain of custody record to support the trading of LCWC and verifies the claim of the end-user of their sole ownership of that consignment and its attributes.





4. Statement

4.1 Main parties involved.

4.1.1 Water Registrant: Is the person or organisation legally empowered to register a Production Device in the Low Carbon Water Production Registry to receive LCWC for the desalinated water produced:

- (a) The entity acting as sole procurer of power and water within the Emirate (Emirates Water and Electricity Company (“**EWEC**”)) will act as a single registrant for the desalinated water produced from DoE licensed production entities (“**Single Water Registrant**”); and
- (b) in the case of unlicensed water production entities and devices, the DoE may allow other registrants in accordance with terms and conditions to be decided by DoE (“**Other Water Registrant**”).

4.1.2 Water Participant: Is an organisation holding a trading account in the Low Carbon Water Production Registry who will act as a Participant in the Water Certification Scheme.

- (a) The entity acting as sole procurer of power and water within the Emirate (EWEC) will act as a single Water Participant for the desalinated water produced from DoE licensed production entities (“**Single Water Participant**”).
- (b) In the case of unlicensed water production entities and devices, the DoE may allow other Participants in accordance with terms and conditions to be decided by DoE (“**Other Water Participants**”).
- (c) In order to act as Water Participant, the organization should also hold one or more trading accounts in the I-REC registry for Clean Energy Certificates.

4.1.3 Local Issuer: The DoE is the organization formally authorised to issue LCWC within the Emirate, upon receiving a request from a Registrant.





4.1.4 Low Carbon Water Production Registry: The Registry holds and maintain records of the full lifecycle of ownership and use of the LCWC.

4.2 The Low Carbon Water Production Registry and the Electricity-Water Conversion Ratio.

4.2.1 The Low Carbon Water Production Registry.

- (a) The Water Registrants will request to include in the registry de Water Production Devices.
- (b) Only Reverse Osmosis Technology Devices are allowed to be included in the Registry.
- (c) The production of water with Reverse Osmosis technology not connected to the electricity grid or to a clean energy electricity source and only connected to a fossil fuel generation plant would not be covered by the Water Certificates.
- (d) The information to be requested to include a Device in the Registry will be defined by the DoE.
- (e) “Evident I-REC(E) Registry” Registry is the single central Registry for LCWC

4.2.2 Water Registrant obligations

- (a) The Water Registrant shall comply with this Policy, together with the related requirements to be approved by the DoE and the Low Carbon Water Production Registry framework.
- (b) The Water Registrant has the sole authority to act in respect of water production attributes associated with its registered Production Device(s).
- (c) When applying for LCWC, the Registrant represents and warrants that:
 - (i) The specific attributes of the qualifying water generated match the corresponding certificates to be issued.



- (ii) The specific attributes of the qualifying water generated match the corresponding electricity consumed.
- (iii) The electricity consumed equivalent to the LCWC requested, has the corresponding Clean Energy Certificates associated with it, being the registered water production device the Clean Energy Certificate Beneficiary.
- (d) The Registrant shall declare all aspects of the water attributes associated with the Production Device(s), as required by the DoE and the Low Carbon Water Production Registry framework. This may include any carbon offsetting or labelling schemes for which the Production Device(s) has been accredited.
- (e) The Registrant shall provide to the DoE in its capacity as Issuer in a reasonable timeframe all necessary information required by this Policy, including any non-conformity of a Production Device(s).
- (f) All information provided by the Registrant should be complete and accurate, to the best of its knowledge.
- (g) The Water Registrant shall grant access to the DoE or their respective agents to all registered Production Device(s) and any associated documents, records and other information related to it, as it is allowed under its contractual arrangements. The Registrant's failure to permit such access entitles the DoE to suspend Issuance of LCWC.
- (h) The DoE has the right to perform unannounced control and auditing visits to the Water Registrant's premises and/or the premises of the Production Device(s). If the Registrant is not the legal owner, it shall procure authorisation from such legal owners of all Production Devices to enable such visits without undue delay or limitation.
- (i) The Single Water Registrant shall ensure a non-discriminatory access to LCWC for all Participants.





- (j) The DoE has the right to request from EWEC, acting as Single Water Registrant and/or Single Water Participant, all information in connection with the LCWC.
 - (i) In compliance with this request, EWEC will submit to the DoE a quarterly report with all requested information including but not limited to prices, volumes, and the timeframe of transactions no later than thirty (30) days after the end of each quarter.
- (k) The DoE and the Water Registrant/Participant shall co-operate (to the extent within their power) to ensure that no unjust enrichment or detriment to the water sector in the Emirate occurs because of an error in the course of the processing of a LCWC, or as a result of any unauthorised access to, or malfunctioning of, the Low Carbon Water Production Registry. For this purpose, any LCWC issued following the Registrant's request may be withdrawn or amended by the DoE, having regard to the objective of securing the accuracy of the LCWC.
- (l) The DoE shall not be liable for any losses incurred by the Water Registrant. However, where there may be successful contractual claims by the relevant I(W)PPAs under its contract with EWEC in its capacity as Single Water Registrant, EWEC will be allowed to propose these contractual claims as pass-through costs through the BST subject to price control submissions and DoE approval, as applicable.

4.2.3 Single Water Participant obligations.

- (a) The Single Water Participant will hold a trading account in the "Evident I-REC(E) Registry" to own Clean Energy Certificates.
- (b) The Single Water Participant will hold a separate trading account in the Low Carbon Water Production Registry to request and trade with LCWC from Licensed Water Production Devices.
- (c) The trading accounts should allow for separate accounting and traceability of CEC linked to LCWC and CEC for other purposes.





- (d) The Single Water Participant is responsible for ensuring that the amount of LCWCs requested to be issued by the DoE has associated CEC equivalents in the “Evident I-REC(E) Registry” account.

4.2.4 The Electricity-Water Conversion Ratio is the ratio between the amount of desalinated water in a device and the electricity consumed during a defined period.

- (a) The Ratio will be updated for each Certificate requested and included in the issued certificate.
- (b) The Ratio shall be calculated for the period of time for which the issuance of certificates has been requested, so that there is a physical and temporal correlation between electricity consumption and desalinated water production. The Unit of measurement is MWh/m³.
- (c) The information to be requested to calculate and update the Ratio will be defined by the DoE.

4.3 Certification process, fees and LCWC prices.

4.3.1 Certification process.

- (a) Water Participants are required to open an account in the “Evident I-REC(E) Registry” to own Clean Energy Certificates and perform transactions.
- (b) Clean Energy Certificates are issued in the nominated account.
- (c) After the Clean Energy Certificates are issued, the Water Registrant can request the DoE to issue LCWC from a specific registered water Production Device.
- (d) The Water Production Device will be the Clean Energy Certificates beneficiary.
- (e) Water Registrant may apply for as many LCWC as the water produced from the registered water Production Device, with the equivalent Clean



Energy Certificates redeemed, calculated according to the Electricity-Water Conversion Ratio of the Device.

- (f) There should be a temporal correlation between the electricity production certified by Clean Energy Certificates and the water production to be certified by LCWC..
- (g) Water Participants can trade and redeem Renewable and Water Certificates attributes. Execute transactions will be recorded in the Low Carbon Water Registry.
- (h) Water Participants will redeem LCWC on behalf of their Water Beneficiaries.. Water Beneficiaries cannot trade with the LCWC.
- (i) On the assignment of a Water Beneficiary in the Water Participants account, the certificates are considered redeemed.

4.3.2 Certification process fees and Low Carbon Water Registry services fees

- (a) The values described below cover the certification process fees, and should be paid directly by the Registrant to the DoE.
 - (i) EWEC acting as Single Registrant is excluded from paying fees to the DoE in its capacity as Issuer (but is still liable to pay any fees levied by the Low Carbon Water Registry).
 - (ii) Other Registrants and Participants: In accordance with terms and conditions to be decided by DoE in its capacity as Issuer.
- (b) The DoE retains the right unilaterally to change its fees and charges subject to Abu Dhabi Executive Council approval. Such change to be notified to the Registrants and Participants in writing (including email) no later than ninety (90) days prior to becoming effective. The DoE will provide a schedule of fees and charges on request from any relevant stakeholder.
- (c) Low Carbon Water Registry services fees (Participant and Registrant fees) would be approved by the Registry and invoices are issued directly by the Registry.

4.3.3 Low Carbon Water Certificate prices





- (a) The Water Certificate price is unregulated and as such is set in bilateral agreements between the parties.
- (b) If agreed, the CEC's price intended for LCWCs will be defined and approved by DoE.
- (c) The DoE, in its capacity as regulator of the Abu Dhabi energy sector shall regulate any activities conducted by EWEC in its role as Single Water Registrant and Single Water Participant, namely in terms of any licensing, monitoring, and reporting requirements, the treatment of revenues, profits and costs, in accordance with any regulations, policies, guidelines, or any other document that the DoE may issue from time to time. If any changes are proposed, these will take effect without prejudice to existing commercial arrangements or applicable price control arrangements.

4.4 Accountability and Exports

- 4.4.1 Any agreement by the Single Water Registrant/Single Water Participant on issue/trade more than one (1) year ahead commitments of LCWC to the same Beneficiaries(s), will be subject to DOE approval.
- 4.4.2 The LCWC issued in the Emirate of Abu Dhabi can only be redeemed within the Emirate.
- 4.4.3 The DoE retains the right to remove partially or totally the restriction in clause 3.4.2. Any change will be notified to the Registrants in writing (including email) no later than ninety (90) days prior to becoming effective.

5. Annexes

None

