



Transport
Emission
Reduction
Certificate

Governance

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Table of Contents

p3

1 - INTRODUCTION

p7

2 - ABOUT THE PROGRAM

p9

3 - PROGRAM METHODOLOGY

p14

4 - PROGRAM CRITERIA

p15

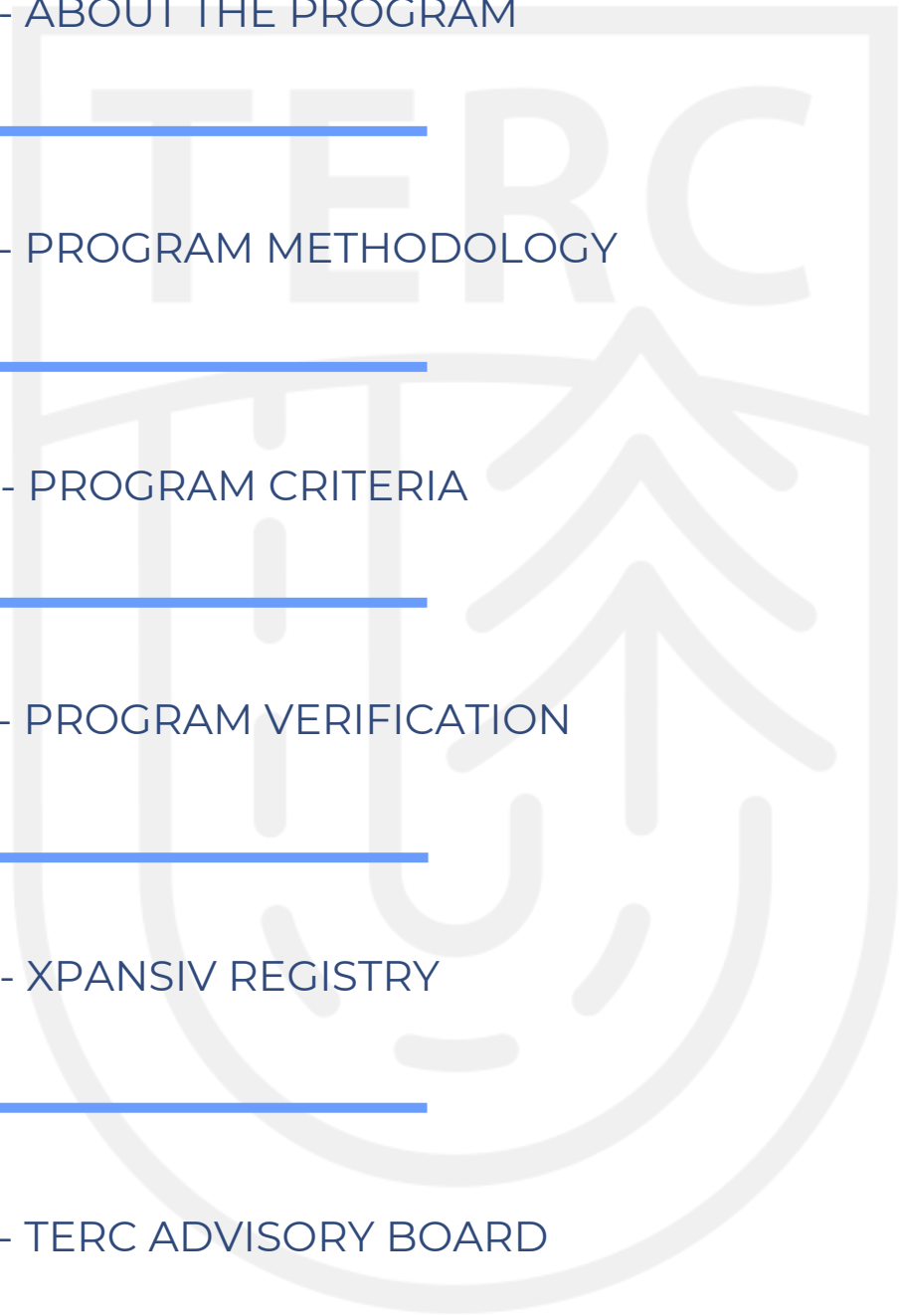
5 - PROGRAM VERIFICATION

p21

6 - XPANSIV REGISTRY

p24

7 - TERC ADVISORY BOARD



1 - INTRODUCTION

1.1 - DEFINITIONS

- Carbon Dioxide Equivalent (CO₂e) – Standard unit of measure used to compare the emissions of different greenhouse gases based on their global warming potential relative to that of CO₂.
- Carbon Intensity (CI) – The quantity of life cycle GHG emissions, per unit of fuel energy, expressed in grams of carbon dioxide equivalent per megajoule (gCO₂e/MJ).
- Denatured ethanol – Ethanol that has substances added to it that make it unfit for human consumption.
- Double counting – When a single TERC unit is issued, sold, or retired more than once.
- Eligible Gallons – Fuel gallons that have been approved by a verification body to generate TERCs. Only gallons that are not sold into a market with a regulated low carbon fuel program can be approved.
- Emission – The production and discharge of gases into the atmosphere that have an environmental impact.
- Emission Certificate – An instrument representing the non-physical, environmental attribute and emission reduction of one metric ton of carbon dioxide-equivalent (tCO₂e) of a low carbon fuel against a benchmark.
- Environmental Attribute – Greenhouse gas emission reduction recognition in any form, including verified emission reductions, voluntary emission reductions, offsets, allowances, credits, avoided compliance costs, emission rights and authorizations under any law or regulation, or any emission reduction registry, trading system, or reporting or reduction program for greenhouse gas emissions that is established, certified, maintained, or recognized by any international, governmental, or non governmental agency.
- Ethanol Fuel Producer – An entity that produces low-carbon fuel from renewable resources.
- Fuel Ethanol - Ethanol derived from starch or fiber in corn kernels or grain sorghum that meets the American Society of Testing and Materials (ASTM) standard specification D4806 for ethanol use as a fuel in spark-ignition engines.

- GREET – Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies is a life cycle analysis model developed by Argonne National Laboratory.
- Greenhouse Gases – Gases that trap heat in the atmosphere, including most prominently, carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), and fluorinated gases.
- Life Cycle Analysis – A method that evaluates the environmental impacts associated with all stages of a given product.
- Life Cycle Greenhouse Gas Emissions – The aggregate quantity of greenhouse gas emissions (including direct emissions and significant indirect emissions, such as significant emissions from land use changes), related to the full fuel life cycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery and the use of finished fuel to the end-consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.
- Low Carbon Fuel – A fuel derived from renewable resources that reduces greenhouse gas and other harmful pollutant emissions.
- Low Carbon Fuel Standard – A regulatory policy designed to reduce carbon intensity in transportation fuels as compared to conventional petroleum fuels, such as gasoline and diesel.
- Methodology – A systematic approach, framework, or set of rules that are followed to ensure consistency and accuracy.
- Participant – A participant in the TERC Program, which might include producers, brokers, marketers, traders, retailers, and end-consumers of low carbon fuels.
- tCO₂e – One (1) metric ton of Carbon Dioxide Equivalent.
 - Unit of measure for a TERC.
 - 1 tCO₂e = 1 TERC

- TERC – A Transport Emission Reduction Certificate, developed by Eco-Energy, modeled after a low carbon fuel standard (LCFS), verified by a third-party verification body, and registered on Xpansiv Digital Fuels Registry, a TERC is:
 - a tradable digital certificate representing the full life cycle GHG emissions of biofuel production and usage;
 - a qualified, unbundled environmental attribute from the production of qualifying low-carbon fuels.
 - representative of 1 tCO₂e.
- TERC Advisory Board – The TERC Advisory Board is comprised of members working in different areas of the bio-fuel energy sector and civil society. The Advisory Board consults the TERC Program in its key field of competence. The board holds an advisory function, providing guidance and direction for the management of the TERC Program.
- TERC Program – A voluntary, market-based initiative aimed at reducing greenhouse gas emission associated with biofuel production and usage across the United States. The TERC Program is centered around the creation, verification, monitoring, trading, use, and continuous improvement of the TERC product.
- TERC Vintage – The TERC vintage represents the year a fuel is produced, and corresponds with the CARB benchmark year for carbon intensity against which it is measured.
- Tier 1 SFE Calculator – A calculator published by the California Air Resources Board that measures carbon intensity for ethanol produced from corn and/or sorghum feedstocks.
- Undenatured Ethanol – Also known as pure ethanol or absolute ethanol, is ethanol that has not been treated with denaturing agents.
- Verification – A systematic, independent, and documented process for evaluation of reported data against the requirements specified in this document.
- Validation/Verification Body - An independent third-party accredited verifier who provides an independent review.
- Verification Services – Services provided by a third-party verification body during verification.

1.2 - ACRONYMS

- AICPA – American Institute of Certified Public Accountants
- AML – Anti-Money Laundering
- CA-GREET – California Greenhouse Gases, Regulated Emissions, and Energy Use in Technologies
- CARB – California Air Board Resource
- CI – Carbon Intensity
- CFR – Clean Fuel Regulation
- CFS – Clean Fuel Standard
- DE – Digital Ethanol
- DF – Digital Fuel
- g CO₂e/MJ – Grams of carbon dioxide equivalent per megajoule
- GHG – Greenhouse Gas
- KYC – Know Your Customer
- LCA – Life Cycle Analysis
- LCFS – Low Carbon Fuel Standard
- SSAE 19 – Supersedes Statement on Standards for Attestation Agreements 19/
Agreed-Upon Procedures Agreement
- SFE – Simplified CI Calculator for Starch and Fiber Ethanol
- TERC – Transportation Emission Reduction Certificate
- VVB – Validation/Verification Body

1.3 - LANGUAGE

The operating language of the TERC Program is English. TERC Program documents may be translated into other languages as the program evolves to facilitate local use. However, the English version of the TERC Program documents shall take precedence over any other language translations.

2 - ABOUT THE PROGRAM

The Transport Emission Reduction Certificate (TERC) Program is a voluntary, market-based initiative aimed at reducing greenhouse gas emission associated with biofuel production and usage across the United States.

Inspired by the success of regulated low-carbon fuel standards (LCFS), which are designed to reduce greenhouse gas emissions in the future below a certain level, the TERC Program enlists the voluntary participation of fuel producers and fuel users to drive down the carbon intensity of transportation fuels.

Qualified producers of low-carbon fuel will be issued TERCs – tradeable digital certificates representing the full life cycle GHG emissions of biofuel production and usage. The certificates will be offered for sale to large consumers of fuel including corporations with a mission to achieve GHG mitigation from transportation in their value chain. Revenue from the program will return to biofuel producers to continue to invest into carbon reduction of their product. Successful adoption is expected to reduce the carbon intensity of transportation fuels in the U.S.

According to a 2021 U.S. Department of Energy Study published by Argonne National Laboratory, corn ethanol produced domestically has 44%-52% lower GHG emissions than gasoline. Existing technologies have the potential to make significant improvements in the overall reduction of life cycle GHG emissions with the potential to be net-zero or even net-negative carbon emissions.

LCFS programs have been successful at incenting significantly lower carbon intensity of ethanol in the areas where they operate.

These programs work by setting a baseline carbon intensity for transportation fuels and requiring fuel producers and importers to meet progressively lower carbon intensity targets over time. Carbon intensity is measured in terms of the amount of carbon (or CO₂ equivalent) emitted per unit of energy provided by the fuel. It takes into account the full life cycle emissions of the fuel, from extraction or cultivation, through refining and distribution, to combustion in a vehicle.

Fuels with carbon intensity below the CI standard are eligible to create LCFS credits, and obligated parties who are large GHG emitters must purchase credits to claim against their carbon deficits.

LCFS programs operate only in certain markets and only for obligated parties. The TERC Program leverages aspects of California's LCFS standard to generate high-quality, third-party verified certificates from the environmental attributes of low-carbon fuel that can be traded voluntarily. TERCs are unbundled from fuel so they can be sold anywhere in the country regardless of where the fuel is delivered. The TERC program relies on the growing voluntary carbon market to facilitate a similar reduction in transportation fuel CI outside of regulated programs.

TERC Program objectives include:

- Capturing the GHG emission reductions represented by low carbon fuels in the form of a tradable digital certificate, or TERCs.
- Providing access to qualified, third-party verified emission reductions to corporate entities to achieve sustainability goals.
- Incentivizing low-carbon fuel producers and their suppliers to reduce the greenhouse gas (GHG) emission of their fuel.
- Promoting operational innovation and production of cleaner low-carbon fuels.

3 - PROGRAM METHODOLOGY

3.1 - INTRODUCTION

Each TERC seeks to capture the greenhouse gas (GHG) emission reduction represented by low carbon fuels versus a benchmark in the form of a tradeable digital certificate. A low-carbon fuel's life cycle GHG emissions will be represented in a carbon intensity (CI) score measured in units of grams of carbon dioxide equivalent per megajoule of energy (g CO₂e/MJ). The CI will be quantified using a version of the Greenhouse Gases, Regulated Emissions, and Energy Use in Transportation (GREET) model in effect under California's Low Carbon Fuel Standard (LCFS) program, and will be measured against a yearly CI benchmark that reduces over time. The resulting difference is reflected as total volume of CO₂e reduced relative to the applicable CI benchmark published by the California Air Resources Board (CARB).

The initial scope of the TERC Program will cover ethanol created at production facilities in the United States. The program is expected to evolve over time to incorporate new fuel types and producers.

3.2 - FRAMEWORK AND METHODOLOGY

To facilitate transparency, TERC will be anchored in existing methodologies under regulated programs that are well-known and understood in the transportation fuels market. In particular, the initial framework of the program will leverage aspects of the California LCFS for the following criteria:

- Generation of CI scores based on the life cycle analysis (LCA) of the fuel.
- Annual benchmarks.
- Credit generation calculation as appearing in the CA-LCFS regulations at 17 CCR § 95486.1(a).
- Third-party verification methodology (refer to section 5 of this document).

3.2.1 - GENERATION OF CARBON INTENSITY SCORES

Under the TERC Program, the life cycle GHG emissions of each low carbon fuel will be determined using an established methodology from California's LCFS.

A fuel's life cycle GHG emissions will be represented in a CI score measured in gCO₂e/MJ.

Each participating producer's fuel pathway(s) will be scored using a version of the GREET model in effect under California's LCFS program*. Where possible, a Simplified Calculator published by CARB and applicable to the fuel pathway will be used. CIs will be calculated annually for each participating producer; the data period used for CI modeling will be the same as required under the LCFS program (i.e., up to 12 months of actual production data, and not less than 3 months of actual production data). Finished fuel transportation distances used in CI modeling will be based on a weighted average of distances to final destinations during the data period, based on knowledge or reasonable belief by the participating producer. If unknown, then a conservative default distance will be used in CI modeling. A fuel's CI score will be compared against a yearly benchmark; fuels with a CI below the benchmark will be eligible to generate TERCs.

*See CA-GREET 3.0

<https://ww2.arb.ca.gov/resources/documents/lcfs-life-cycle-analysis-models-and-documentation>

3.2.2 - ANNUAL BENCHMARK AND VINTAGE YEAR

The carbon intensity benchmark used in TERC credit generation calculations will be as published and in effect for the applicable fuel type under the LCFS program*. Currently these baselines appear in Table 1.

Table 1 - LCFS Carbon Intensity Benchmarks for 2011 to 2030 for
Gasoline/Substitute for Gasoline

YEAR	AVG CARBON INTENSITY (gCO ₂ e/MJ)	YEAR	AVG CARBON INTENSITY (gCO ₂ e/MJ)
2010	Reporting Only	2021	90.74
2011	95.61	2022	89.50
2012	95.37	2023	88.25
2013	97.96	2024	87.01
2014	97.96	2025	85.77
2015	97.96	2026	84.52
2016	96.50	2027	83.28
2017	95.02	2028	82.04
2018	93.55	2029	80.80
2019	93.23	2030 & Subsequent Years	79.55
2020	91.98		

*The benchmarks for years 2011 and 2012 reflect reductions from base year (2010) CI values for CaRFG (95.85) calculated using CI for crude oil supplied to California refineries in 2006.

**The benchmarks for year 2013 and 2015 reflect reductions from revised base year (2010) CI values for CaRFG (95.85) calculated using CI for crude oil supplied to California refineries in 2006.

***The benchmarks for years 2016 to 2018 reflect reductions from the revised base year (2010) CI values for CaRFG (98.47).

***The benchmarks for years 2019 to 2030 reflect reductions from the revised base year (2010) CI values for CaRFG (99.44).

TERC vintage will correspond to the year as set under California's LCFS carbon intensity benchmarks.

As California-GREET model and LCFS CI benchmark values are updated, Xpansiv will reflect both as used for given qualified fuel and TERC issuance.

*LCFS Carbon Intensity Benchmark as appearing in the CA-LCFS regulations at 17 CCR § 95484 (b)

https://ww2.arb.ca.gov/sites/default/files/2020-07/2020_lcfs_fro_oal-approved_unofficial_06302020.pdf

3.2.3 - TERC CREDIT GENERATION CALCULATION

The formula appearing in the LCFS regulations at 17 CCR §95486.1(a), including all incorporated references, shall be used to calculate the quantity of TERCs generated annually*. The volume input for this formula will be the volume of eligible low carbon fuel produced and sold by a participating producer.

Calendar Q1 - Q4 of Year X, for the annual credit generation of Year Y.

One tCO₂e calculated as described above will be equivalent to one (1) TERC.

Only whole credits will be issued, meaning calculation remainders are rounded down to whole credit number.

Credits = [(CARB LCFS baseline year CI – CARB LCFS fuel pathway CI) * 81.51 (CARB LCFS MJ/ gal energy density of ethanol) * 0.000001 (conversion factor) * verified gallons of ethanol]

Example:

1732 Credits = (88.25 - 67) * 81.51 * 0.00001 * 100,000 gallons

Where: CARB LCFS 2023 CI baseline = 88.25 g CO₂e/ MJ and CI for given plant = 67 g CO₂e/ MJ

*Formula appearing in the LCFS regulation at 17 CCR §95486.1(a)

https://ww2.arb.ca.gov/sites/default/files/2020-07/2020_lcfs_fro_oal-approved_unofficial_06302020.pdf

Table 2. Energy Densities and Conversion Factors for LCFS Fuels and Blendstock

Fuel (units)	Energy Density
CARBOB (gal)	119.53 (MJ/gal)
CaRFG (gal)	115.83 (MJ/gal)
Diesel Fuel (gal)	134.47 (MJ/gal)
LNG (gal)	78.83 (MJ/gal)
CNG (Therms)	105.5 (MJ/Therm)
Electricity (KWh)	3.6 (MJ/KWh)
Hydrogen (kg)	120 (MJ/kg)
Undenatured Anhydrous Ethanol	80.53 (MJ/gal)
Denatured Ethanol (gal)	81.51 (MJ/gal)
FAME Biodiesel (gal)	126.13 (MJ/gal)
Renewable Diesel (gal)	129.65 (MJ/gal)
Alternative Jet Fuel (gal)	126.37 (MJ/gal)
Propane (LPG) (gal)	89.63 (MJ/gal)

* LCFS Energy Density as appearing in the CA-LCFS regulations at 17 CCR §95486.1(b)(1) https://ww2.arb.ca.gov/sites/default/files/2020-07/2020_lcfs_fro_oal-approved_unofficial_06302020.pdf

3.2.4 - EXEMPTIONS

TERCs will be generated only for fuels produced or imported for sale outside of a jurisdiction that provides a regulatory mandate or direct incentive for the use of low carbon fuels.

4 - PROGRAM CRITERIA

4.1 - PARTICIPATION

The TERC Program can include low carbon fuel producers, brokers, marketers, traders, retailers, and end-consumers.

TERC participants will interact with Xpansiv Digital Fuel Registry to register, transact, and retire TERCs. <https://xpansiv.com/digital-fuels/>

The Xpansiv Digital Fuel (DF) Registry provides the central source for all information relating to registered TERCs. Xpansiv Digital Fuel Registry is also responsible for issuing TERC serial numbers, and tracking TERC retirements. The registry makes TERC information and documentation publicly available and can be accessed via the Xpansiv website.

Xpansiv DF Registry staff members are responsible for undertaking a completeness check on documentation and for ensuring adherence to the TERC Program rules with respect to the registration and issuance as well as retirement process.

As set out in this TERC governance document, Eco-Energy and the TERC Advisory Board are responsible for setting out and reviewing TERC Program rules and overseeing verification bodies to ensure the integrity of TERCs in the Xpansiv Digital Fuel Registry.

4.2 - FUEL TYPES

Denatured Fuel Ethanol derived from starch or fiber, or grain sorghum is currently the only eligible fuel type approved under TERC Program. Other low carbon fuels may be considered in future versions of this program.

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5 - PROGRAM VERIFICATION

5.1 - INTRODUCTION TO FRAMEWORK AND METHODOLOGY

A system for third-party verification is used to ensure accuracy and completeness of reported GHG data.

TERCs will be generated annually only after independent, third-party verification of the following elements:

- Calculation of CI score for participating producers' products.
- Product volumes produced and distributed to a qualifying jurisdictions (outside of states/regions with a regulatory mandate or direct incentive for the use of low carbon fuels).

The methodology for the verification will be an attestation engagement consistent with the statements on Standards for Attestation Engagements (SSAE), developed by the American Institute of Certified Public Accountants (AICPA), under the agreed-upon procedures model of SSAE 19.

5.2 - VERIFICATION OF ANNUAL CARBON INTENSITY SCORES

- Fuel producer will engage directly with third-party verification body.
- Verifier will issue engagement letter and protocols to fuel producer participant.
- Fuel producer submits required documentation to verification body.
- Verification process will consist of the following data checks:
 - Transactional verification: Low carbon fuel production and shipment records.
 - Operational verification: Feedstock and process energy consumed, renewable fuel and co-product production, transportation distances.

- Site visit – participating fuel producers with no existing LCFS or EPA Facility ID may be required to have a site visit by verifier.
- Upon completion of verification, verifier will issue a TERC CI score statement report.
- Verification may take up to 3 months, or as determined by the verification body.

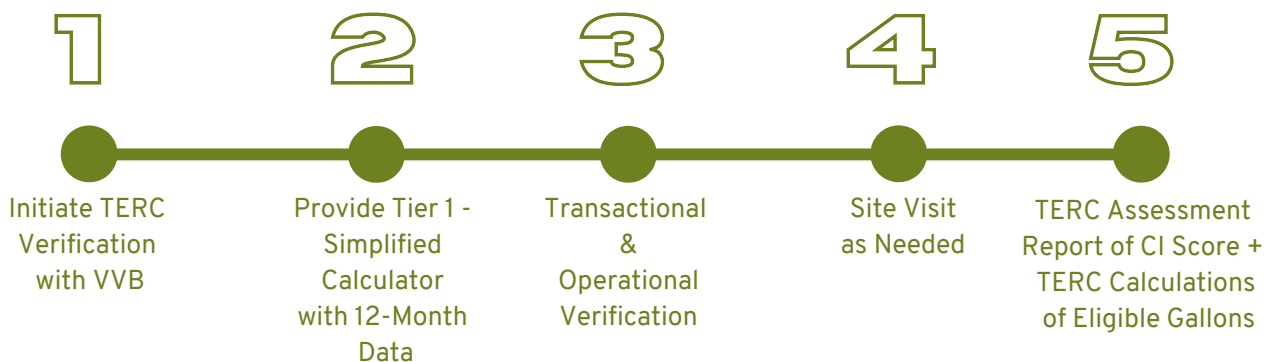
5.3 - DOCUMENTATION REQUIREMENT

- Tier 1 Simplified CI Calculator for Starch and Fiber Ethanol (SFE) issued by CARB, containing 12 months of data.
 - Fuel producer to calculate and provide CI score using most recent/updated version calculator found/posted under CARB website.
 - Supplemental information - fuel participant must provide supporting evidence for specified inputs to CI calculator.
- All information required per engagement letter and protocols specified by third-party verifier must be provided.

5.4 - VERIFICATION OF TERC ELIGIBLE GALLONS

- Verifier to confirm eligible fuel gallons.
- Verifier to apply TERC established formula appearing in 3.2.3 to the eligible verified fuel gallons to authenticate TERC credit generation.
- Upon completion of verification of eligible gallons and TERC calculation, verifier will issue an eligible fuel gallons and calculation application statement report.

Table 3: TERC Verification



5.4.1 - TERC GENERATION TIMELINE

Fuel producers will be eligible to generate TERCs under ex-post process only after third-party verification. *Retroactive – means prior year fuel production.

Table 4: TERC Credit Generation Timeline

Year of Verified Transaction	[*Retroactive] TERC Credit Generation Eligible Fuel Production Date
2022	1/1/2021 - 12/31/2021
2023	1/1/2022 - 12/31/2022
2024	1/1/2023 - 12/31/2023
2025	1/1/2024 - 12/31/2024
2026	1/1/2025 - 12/31/2025
2027	1/1/2026 - 12/31/2026
2028	1/1/2027 - 12/31/2027
2029	1/1/2028 - 12/31/2028
2030 - beyond	Prior Year

5.4.2 - TERC ISSUANCE

Upon Xpansiv Digital Fuel Registry receipt of fuel producer account registration, eligible fuels containing all required data, including, but not limited to verified CI score, eligible fuel volume, and production period from verification body, fuel units will be registered and TERCs generated based on 3.2.3 credit generation formula. The TERCs are deposited to the account holder in accordance with the registry rulebook terms of use.

For more information on issuance process see Xpansiv Digital Fuels Registry Operating Procedures.

5.5 - ACCREDITATION REQUIREMENTS FOR VERIFICATION BODIES

Verification bodies are eligible to provide verification services under the TERC Program if they have signed the required agreement with TERC and are accredited, qualified, and trained verifier under CARB accreditation program.

To become an approved verification body with the TERC Program, organizations must submit letter via email requesting interest in the TERC Program, along with supporting evidence that they have been verified under California Air Board Resource accreditation program to info@terc-energy.com.

Currently, the only accredited, approved, and qualified verification body providing verification services under TERC Program is Weaver and Tidwell, L.L.P. As soon as other accredited, qualified, and trained verification bodies join the TERC Program, TERC will make available a list on TERC website.

5.5.1 - REQUIREMENTS FOR VERIFICATION SERVICES

All verification services must be performed by verification bodies accredited under CA-CARB accreditation program and approved by TERC Advisory Board.

The verification body must provide the following to TERC staff:

- Notification of validation services.
- General information on the entity acquiring verification such as entity's name, address, and email address.
- Expected date for completing verification services.
- Upon completion of verification, Agreement Upon Procedure Report of the following elements - CI score and eligible gallon.

5.6 - JURISDICTION

The following persons are subject to the jurisdiction of TERC Program:

- Any fuel producer participant;
- Any verifier;
- Any person buying or selling TERCs;
- Any person retiring TERCs;
- TERC Advisory Board;
- Eco-Energy;
- Xpansiv

TERCs will be generated only for eligible fuels produced or imported for sale outside of a jurisdiction that provides a regulatory mandate or direct incentive for the use of low carbon fuels. U.S.A. states with regulatory mandate: California LCFS, Oregon Clean Fuel Program (CFP), Washington Clean Fuel Standard (CFS). Other regions with regulatory mandate: Canada Clean Fuel Regulations (CFR), and any Canada province with an established low carbon fuel program, Brazil RenovaBio program.

A person who uses a quantity of an eligible low carbon fuel produced from an eligible feedstock to create TERCs in a jurisdiction as per prescribed above, must not use that quantity of low-carbon-intensity fuel to create TERCs.

Fuel producers must be located within the U.S. Low carbon fuel producers located in other countries, including those importing into Canada and the U.S., may be considered for future versions of the program or a separate framework appropriate to those regions.

5.7 - AUTHORITY TO SUSPEND, REVOKE, MODIFY, OR INVALIDATE

If the TERC Advisory Board determines that there is any cause for the invalidation of TERCs based on the reasons set forth below, the responsible party will be suspended from participation in the TERC Program and the certificates will be immediately invalidated and deleted.

Any of the information, documents, data, or reports used to generate or support the verified CI or TERC eligible gallons was incorrect or omitted including:

- Low carbon fuel production
- Shipment records
- Feedstocks
- Transportation distances

5.7.1 - DOUBLE COUNTING, DOUBLE SELLING, AND DOUBLE CLAIMING

A given amount of fuel and any linked attributes can be applied to an end consumer's claim only once.

The following are prohibited under the TERC Program:

- The same TERCs are sold to more than one participant.
- A participant counts the same TERC eligible fuel toward meeting its compliance requirements under any of the jurisdictions mentioned in section 5.6.
- Two different participants claim the same environmental attribute.
- The same attribute is claimed and retired toward two different emission calculations.

To ensure accuracy and transparency within the TERC Program and avoid double claiming, selling, and counting, TERCs will be generated and issued:

- Only for eligible fuels produced or imported for sale outside of a jurisdiction that provides a regulatory mandate or direct incentive for the use of low carbon fuels. Refer to section 5.6.
- Only after third-party verification approvals and reports are generated, submitted through Xpansiv Digital Fuels Registry, and checked for completeness and accuracy.
- Xpansiv Digital Fuels Registry will assign each TERC a unique identifier that offers traceability of origin, transfer and ownership, and retirement. [Xpansiv Digital Fuels Governance](#)

6 - XPANSIV REGISTRY

6.1 - INTRODUCTION

The Xpansiv Digital Fuels Registry, powered by APX, collects and tracks information regarding the generation, transfer, and retirement for fuel programs, including TERC.

The Registry will track the attributes associated with assets generated by the TERC Program.

Any party, including producers, traders, or purchasers, wishing to issue, hold, transfer, or retire assets, is required to establish an account in the Registry to do so. The Registry will provide Account Holders and the public with reports on activity within the system. Public reports are accessible to anyone via the public page on the Registry website and are intended to ensure transparency for assets issued and retired.

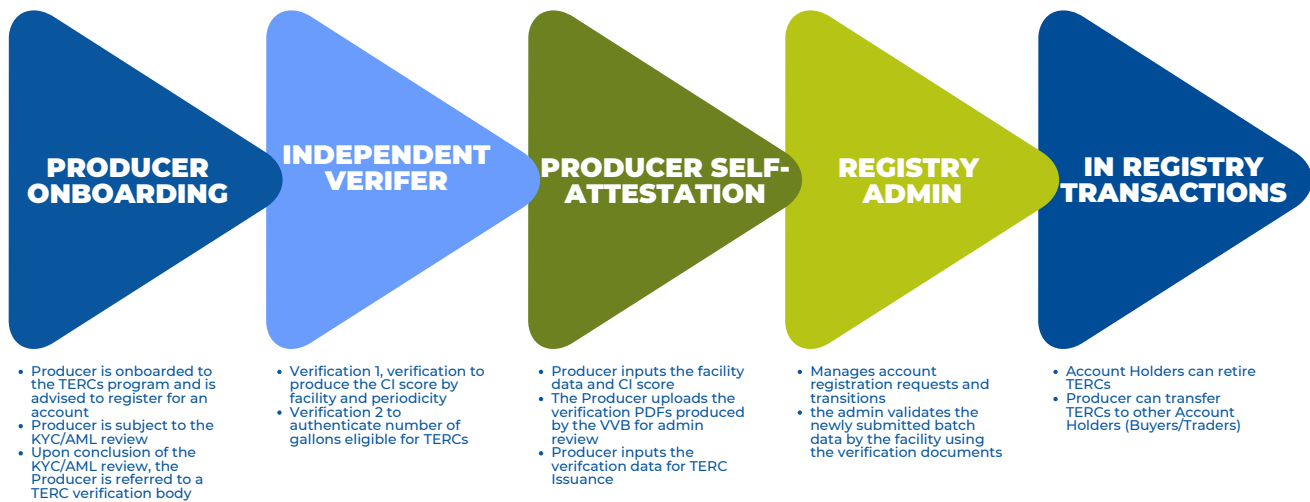
6.2 - XPANSIV DIGITAL FUELS REGISTRY OPERATING PROCEDURES

For information on Account Registration, Account Types and User Roles, Reports, and Registry Programs, please see Digital Fuels Registry Operating Procedures.

6.3 - XPANSIV DIGITAL FUELS REGISTRY TERMS OF USE

For information on the terms of use for transacting in TERCs through the Xpansiv Digital Fuels Registry, please see [Xpansiv's Terms of Use](#).

6.4 - TERC REGISTRY SOLUTION



6.4.1 - PRODUCER ONBOARDING

- A fuel producer interested in registering for the program and generating TERCs is advised to register for a “Producer Account” under the Xpansiv Digital Fuels TERC registry.
- The producer is subject to a Know-Your Customer (KYC) and/or an Anti-Money Laundering (AML) analysis.
- Upon conclusion and approval of the KYC/ AML review, the fuel producer is referred to a TERC-approved verification body for a full life cycle analysis and CI generation of eligible fuel.

6.4.2 - INDEPENDENT VERIFICATION

- Verification 1 – Ethanol CI Verification – Verification to produce the CI Score by facility, pathway, and period.
- Verification 2 – Eligible Gallons Verification Report – Verification to authenticate number of gallons eligible for inclusion in the TERC program.
- The participating ethanol fuel producer will receive two (2) verification documents from the acting verifier, summarizing Verification 1 and Verification 2. These documents will be required for generation of TERCs in the Xpansiv Digital Fuels Registry.

6.4.3 - PRODUCER SELF-ATTESTATION

- The producer inputs facility data into the Xpansiv Registry. The data entered must match the data recorded from the required verification reports.
- The producer uploads the required verification reports for review by Xpansiv Administrator.
- Producer inputs verification data from the required verification reports. The data entered must match exactly the data recorded from the required verification reports.

6.4.4 - REGISTRY ADMINISTRATION

- Xpansiv Digital Fuels Registry Administration manages account registration requests and transactions.
- The administrator validates data payload submitted by the producer through self-attestation by comparing it against the reports from the verification body.
- The administrator evaluates the issuance request submitted by the fuel producer and oversees the approval request.

6.4.5 - IN REGISTRY TRANSACTIONS

- TERCs are issued once data has been evaluated, validated, and approved.
- Producers can transfer TERCs to other Account Holders (Buyers/Traders).
- Account Holders can retire TERCs on their own behalf or on behalf of beneficial owners.

7 - TERC ADVISORY BOARD

7.1 - INTRODUCTION

The TERC Advisory Board will oversee the quality, veracity, effectiveness, and commercial propriety of the Transport Emission Reduction Certificate (TERC) program as it relates to the creation of carbon reduction methodologies, their application to the production of qualifying fuels, and the sale of resulting environmental attributes in a market-based setting.

An active Advisory Board with a well-defined governance structure is necessary to produce scientifically supported results, maintain integrity of the program, and support industry-wide acceptance of innovative products in an evolving voluntary carbon landscape.

7.2 - BASIC PRINCIPLES

- The TERC Board has an advisory function, providing guidance and direction for the management of the TERC Program. Decision making should be facilitated based on the expertise of the TERC Board members in different areas of the bio-fuel energy sector and civil society. The Advisory Board consults the TERC Program in their key field of competence.
- The decisions made within the Advisory Board meetings are not legally binding but are highly valued and followed in all conscience.

7.3 - TASKS

- The TERC Advisory Board meets on a regular basis with the management of the TERC Program to review the development of the TERC Program and to elaborate on strategic and major operational issues and the respective implementation measures.
- The TERC Advisory Board members fulfil the following tasks:
 - Exchange, discuss and advise to support the strategic future-oriented developments of TERC Program with their specific professional expertise and scientific background.
 - Review the development of the program.
 - Be involved in strategic and major operational issues and the respective implementation measures.
 - Network and communicate with relevant stakeholders and customer groups in the relevant fields of research, civil society, and the private sector to increase the publicity and credibility of TERC Program.

7.4 - COMPOSITION

- The TERC Advisory Board contains a minimum of three but up to eight external members from relevant sectors and regions. TERC key stakeholder groups including bio-fuel producers, refineries, traders, brand owners, retailers, researchers, NGOs, and civil society organizations may be represented in the TERC Advisory Board.
- The composition of the external members should be equally distributed between the different stakeholder groups. An international composition of the Advisory Board shall be intended.
- Substitution will not be permitted, as it is an individual and not a company position that is selected.
- The TERC Advisory Board is chaired by an independent Chairperson, and the chairperson is supported by one Vice chairperson. Chairperson and Vice-chairperson should be elected by the board members immediately after the formation of the TERC Advisory Board. Chairperson and Vice Chairperson are elected for a period of three years.

7.5 - APPOINTMENT OF NEW MEMBERS

- New members are elected by the Advisory Board with simple majority. Abstention from voting is assessed as no-vote.
- The nomination for the TERC Advisory Board is valid for the term of three years. Re-nomination for more than one term is possible.
- The Advisory Board members can resign from the position at any time by written notification to the Chairperson.
- Board members shall respect and act in accordance with the visions and motives of TERC Program.
- Any Board member may only be dismissed for good reason.
- Board members must be able to communicate in English, the official working language the TERC Program.

7.6 - ADVISORY BOARD MEETINGS

- The TERC Advisory Board should meet at least 1 time in a year in person. Additional quarterly meetings are possible, also virtually (e.g., telephone conference or shared screen session) and with specific thematic priorities, in coordination with the Advisory Board members.
- Each Advisory Board member has a seat and a vote. Voting is done by hand signal, and all decisions are always based on simple majority. Abstention from voting is counted as a no-vote.

CITATIONS

California Air Resources Board. (2020) Low Carbon Fuel Standard.

Lee, U., Kwon, H., Wu, M., & Wang, M. (2021). Retrospective analysis of the U.S. corn ethanol industry for 2005–2019: Implications for greenhouse gas emission reductions. *Biofuels, Bioproducts and Biorefining*, 15(6), 1318-1331.