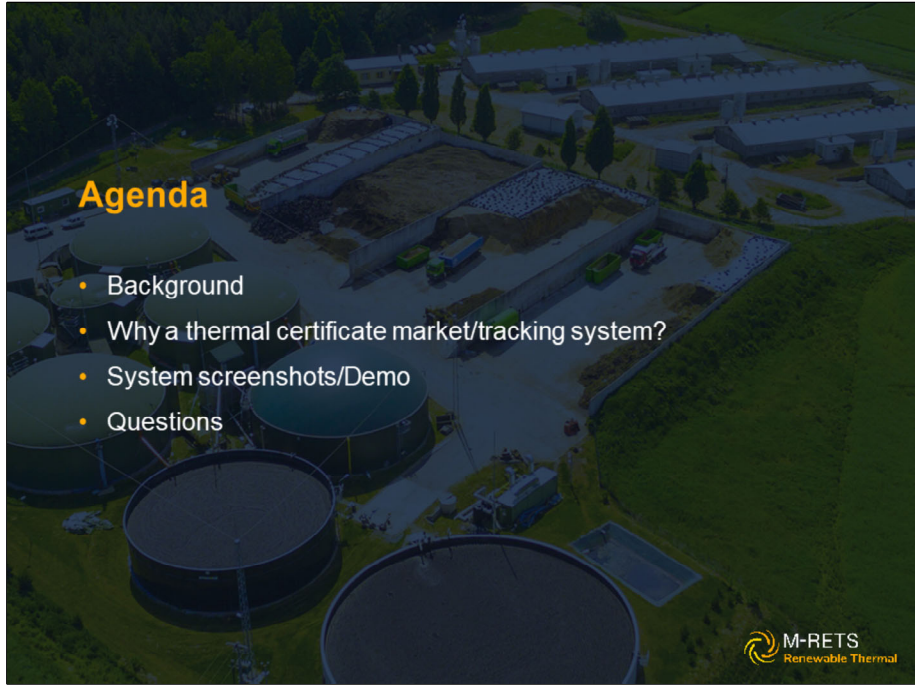




Low Carbon Fuel Standard Public Workshop to Discuss Potential Regulation Revisions, Part 2

Renewable Natural Gas Attribute Tracking

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GOTOWEBINAR
Benjamin L. Gerber
CEO, M-RETS



Agenda

- Background
- Why a thermal certificate market/tracking system?
- System screenshots/Demo
- Questions

Background

- **Mission:** M-RETS validates the environmental attributes of energy to serve as a trusted centralized gateway to environmental markets.
- Independent non-profit 501(c)(4) with a stakeholder board.
- M-RETS tracks in all North American states and provinces.



M-RETS offers a best in class product at the lowest possible cost. Providing value today while accommodating our stakeholders' needs for the future.

M-RETS offers a team of full-time dedicated development and support staff. We put users needs into functional software.

M-RETS is a proprietary web-based database platform that tracks Renewable Energy Certificates ("RECs") and Renewable Thermal Certificates ("RTCs"). M-RETS facilitates environmental attribute transactions by issuing a unique, traceable digital certificate for every unit of renewable energy recorded on the platform. M-RETS users can choose to retire certificates either to comply with state mandates or to fulfill their voluntary commitments, ensuring that certificates are not double-counted. Currently M-RETS registers projects across all of North America.

Why use a certificate tracking system?

The goals: simplicity, efficiency & transparency

Account	M-RETS ID	Project	Thermal Resource	Feedstock	Vintage	Location	Quantity (RTCs)	Serial Numbers
My biogas account	T1111	Jones Farm	Biogas	Biogas (Generic)	11/2016	ND	4200	T1111-ND-11-2016-015980
My biogas account	T1111	Jones Farm	Biogas	Biogas (Generic)	12/2016	ND	1000	T1111-ND-12-2016-AAG515
My biogas account	T1111	Jones Farm	Biogas	Biogas (Generic)	09/2018	ND	500	T1111-ND-09-2018-CB32DF
My biogas account	T1111	Jones Farm	Biogas	Biogas (Generic)	08/2018	ND	100	T1111-ND-08-2018-3685AA
My biogas account	T1112	Springfield Landfill	Renewable Natural Gas	Anaerobic Digestion of 100% Green Waste	09/2018	ND	967	T1112-ND-09-2018-F115D0
RTCs account 2	T1111	Jones Farm	Biogas	Biogas (Generic)	10/2018	ND	45	T1111-ND-08-2010-BAF555

M-RETS
Renewable Thermal

A web-based tracking system that both supports existing markets and establishes robust new markets, works to support goals of regulators and those seeking to verify, certify, and/or market claims and builds trust between all parties. The simplicity reaches out to market participants and regulators, it gives the parties a platform to transact certificates in a liquid market. The transparency is what can build the trust between market players as well as give regulators access to validate claims made in support of the programs they oversee.

The goal is simplicity, efficiency, and transparency for all parties

Generate.

Streamline credit management and prevent double counting

Compliance.

Provide regulators with an independent, easy to use, and reliable source to verify compliance

Liquidity.

Provide a mechanism to manage holdings, effectuate transactions, and maintain claims

Supported Thermal Resources



Thermal Resources*

- Renewable Natural Gas
- Biogas
- Hydrogen (Green or Blue)
- Compost Heat Exchange System
- Air, Ground or Water Source Heat Pump
- Non-Renewable Additives**
- Solar Thermal
- Woody Biomass System

* More thermal resources can be added, **Non-Renewable Additives are tracked but do not qualify for certificates



M-RETS **is not** a policy decision-making body

Once authorities make policy decisions, M-RETS can insert software code or utilize manual checks to assist with compliance reporting. The currently supported resources can be expanded. If one state or political entity does not recognize a thermal resource or feedstock as renewable, software code can be inserted to prevent that feedstock/thermal resource from being retired to satisfy that specific program.

M-RETS does this through:

- Operating Procedures
- Board of Directors
- Regulator Group
- Subscriber Group
- Other advisory groups

What does an RTC look like?

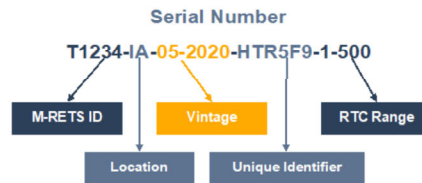
RTC Information

Dekatherm (Dth) Renewable Thermal =
1 Renewable Thermal Certificate

Certificate Details include:

- Serial Number (See Example)
- Account
- Project
- Thermal Resource
- Feedstock
- Vintage
- Location
- Quantity

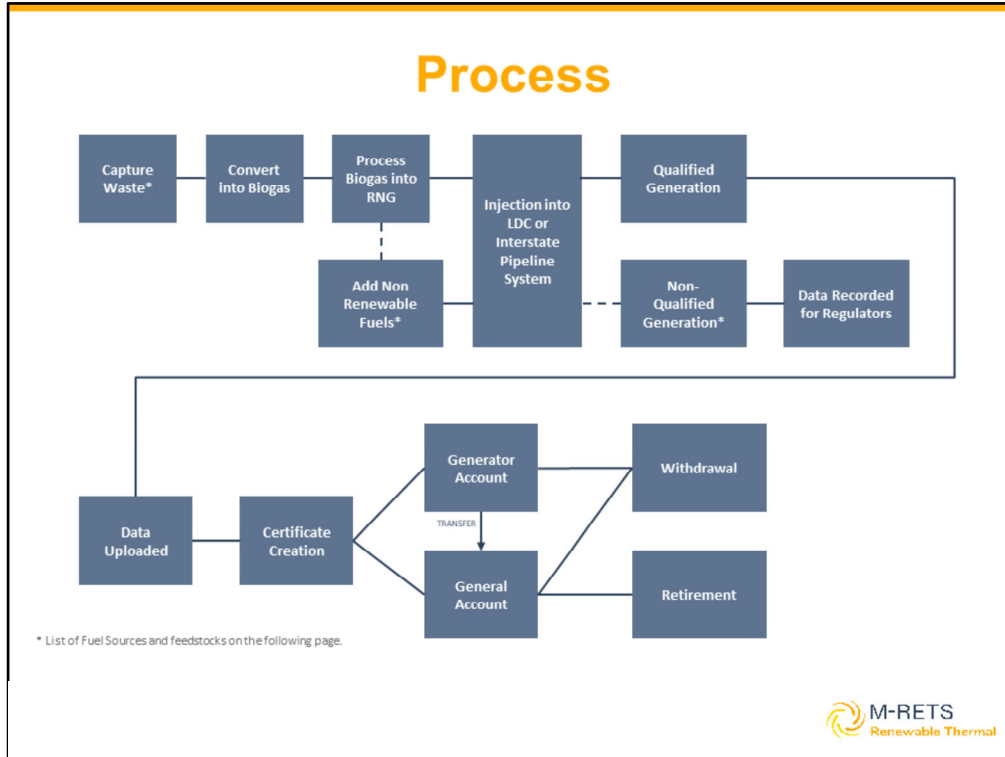
Carbon Pathways (If Applicable)
IRE Verification (If Applicable)



*IRE stands for Independent Reporting Entity which is a third party that reports data
On behalf of a generator M-RETS.



Renewable Thermal Certificate (RTC): a unique representation of the environmental attributes associated with the production, transport, and use of one dekatherm of renewable thermal energy (e.g., one Dth of RNG).



This is a visual representation of possible pathways as currently operating in the M-RETS System. This can always be updated and customized to reflect the needs of individual programs like the California LCFS.

RTC Organization Structure

- **Generator Accounts:** This Type of Organization can register one or more RT Generators and have certificates issued to it for its Generators. A Generator Only Account can hold, make outgoing transfers, and withdraw certificates only if they are to be used in another regulatory scheme such as the California Low Carbon Fuel Standard, United States Environmental Protection Agency Renewable Fuel Standard. While Generator Only Accounts do not have annual fees, there may be fees associated with withdrawing certificates.
- **General Subscription:** This type of Organization can hold, transfer (outgoing and incoming), and retire Certificates as well as register and maintain Generators and have Certificates issued to it for its Generators. This Organization type is the only type that can retire Certificates for compliance with any State or Provincial Compliance programs that utilize MRETS.



These are the different types of accounts.

RTC Batch Details ×

Serial Numbers T1112-ND-09-2018-F115DD-9001 to 9977


Project	Account	Thermal Resource	Feedstock	Vintage	Quantity
Springfield Landfill	My biogas account	Renewable Natural Gas	Anaerobic Digestion of 100% Green Waste	09/2018	977

Injection Receipt:

Carbon Pathways

Name	Tool Name	Carbon Intensity	grams CO2 / Dth	Date Range	CP Endpoint	CP Endpoint Description	Injection Point	Document
RNG LCA #1	GHGenius 5.0f	0.25	263.750	2018-01-01 - 2020-01-01	Injection Point	N/A	46.1764445, -123.9092231	t2n-1248_report.pdf

Eligibilities
No eligibilities available



This is an example of an active certificate batch in the system.

Feedstock: Raw material that for the purposes of M-RETS considered renewable and that is transformed through chemical, physical or any other process into a renewable Resource Type.

Thermal Resource Type: The type of fuel or other naturally occurring thermal energy source produced by the associated Generating Unit. Resource Type is indicated during generator registration (e.g., a biogas generator produces biogas as a Resource Type while a renewable natural gas generator produces renewable natural gas).

Vintage: Month and Year of generation. The vintage on the issued Certificate will be the last month and year of generation contributing to an accumulated Dth.

Carbon pathways are not required and it is likely that the LCFS would not require them as they still track LCA in their own system.

Full Lifecycle Carbon Pathway - Takes into account the GHG emissions associated with all of the steps of producing, transporting, and consuming a fuel.

Partial Carbon Pathway: Takes into account the GHG emissions associated with all of the steps of producing a fuel up to the Injection Point or interconnection into the distribution system or interstate transportation system. Expressed as a Carbon Intensity. Some programs may allow a Partial Carbon Pathway to represent the CI of the fuel from the Injection Point to the source.

RTC Batch Details ×

Serial Numbers T1112-ND-08-2018-CC341F-586 to 600


Project	Account	Thermal Resource	Feedstock	Vintage	Quantity
Springfield Landfill	California LCFS Program Retirement	Renewable Natural Gas	Anaerobic Digestion of 100% Green Waste	08/2018	15

Carbon Pathway
No carbon pathway available

Notes: For LCFS Retirement **Eligibility**

Period: 2020

Retired For: CA



This is the example of what an LCFS retirement could look like. Users are also able to select quarters as well for the Period, so it could read Q1 2020 or Q2 2020. Eligibilities are used to state within the database whether a specific RTC qualifies for a compliance or voluntary program. M-RETS could create an LCFS eligibility that allows projects certified by the ARB to create certificates in the M-RETS System. In order to retire a certificate for an LCFS Program, the certificate would need to have an eligibility for the LCFS present. If the eligibility is not present, the M-RETS Program Feature would prevent the user from completing the retirement. This protects both users and regulators and prevents mistaken retirements.

Benefits to LCFS Participants

- Regulatory transparency
- Liquidity
- Efficiently demonstrate and confirm chain of custody
- Significantly reduce risk of double counting—one source of truth for voluntary and compliance markets
- Easily manage inventory and claims across markets in one system
- Dedicated development and support team



- M-RETS can help reduce the paper attestations that go along with the current system—while still including relevant documentation and data throughout the lifecycle of the certificate.
- Liquidity is necessary for an efficient market. The ability to sell attributes across different markets and for regulators to have one source of truth across markets will build the trust this market needs.
- M-RETS provides transparency in chain of custody to the regulators through the whole lifecycle of the asset and to buyers who can see where they got the asset from.
- As RNG grows in importance, the risk of double counting goes up. M-RETS can work with regulators to prevent double counting by providing an unprecedented level of market transparency.
- M-RETS supports voluntary and compliance markets so that marketers and generators can decide which market to access.
- M-RETS maintains a team of full-time software developers that only work on this product. This is our passion and we put everything we have into it.

Why M-RETS?

Well-Established Relationships.

M-RETS maintains strong relationships with many state regulators

Industry Credibility.

A long track record in commodity tracking among clean energy stakeholders

Proven Platform.

Using the M-RETS platform saves high initial startup costs and ensures a stable rollout

Responsiveness.

In-house development staff

Business Model.

501(C)(4) status allows M-RETS to focus resources on maintenance and improvements

Accepted Practice.

Similar market structures and complimentary processes between RECs and RNG justify using a system already trusted by regulators and market participants



