CANADIAN GAS ASSOCIATION
ASSOCIATION CANADIENNE DU GAZ

# Canadian Low-Emission Energy Registry

*A centralized repository of production data from all low-emission energy produced in Canada*

## We are building a low-emission energy registry

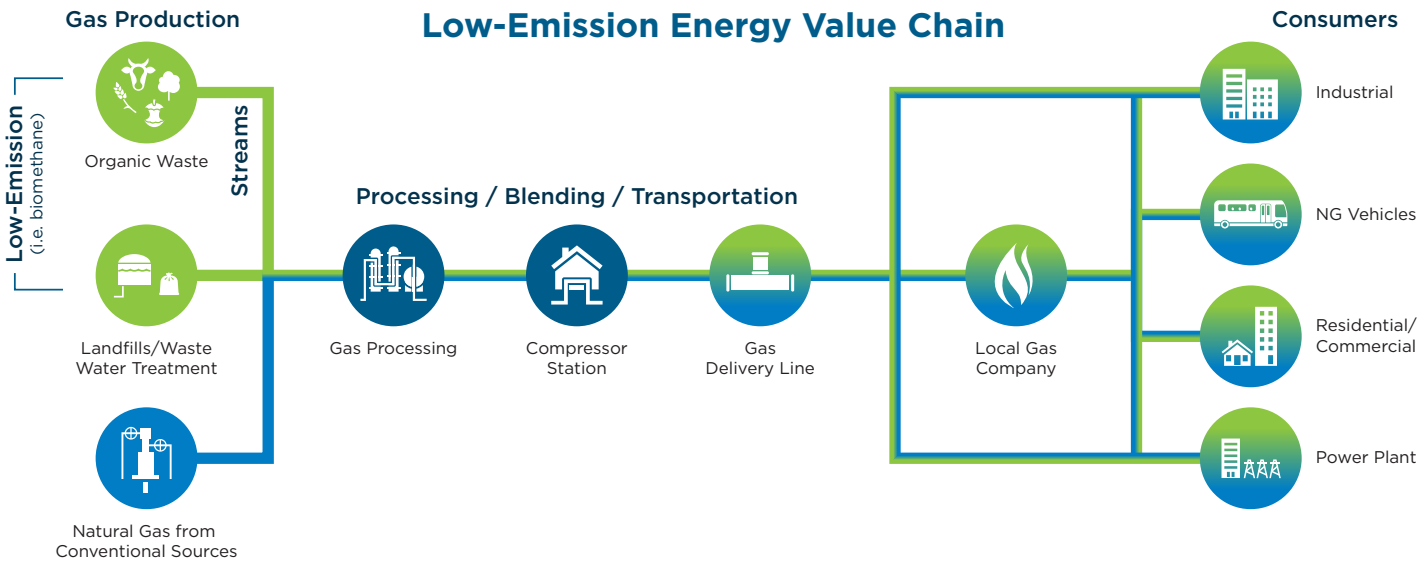
The Canadian Gas Association is establishing a Canadian Low-Emission Energy Registry (CLEER) that addresses the immediate and compelling requirements to accurately and transparently track and report on the impact that the biomethane industry is having on reducing emissions associated with deliveries of natural gas. The CLEER will be the central repository of production data from all low-emission energy produced in Canada. Initially limited to biomethane, the CLEER will eventually include hydrogen, and other forms of low-emission energy.

The CLEER will help to promote the adoption of lower GHG emitting forms of energy for heating homes and businesses, and powering industry. It will do this through a rigorous, transparent, and verifiable quantification of the environmental attributes associated with the production and consumption of low-emission energy. It will provide transparent and verifiable tracking of the environmental attributes, from production, through to retirement, and increase trust amongst regulators, policy makers, and customers, of biomethane, and other sources of low-emission energy, as a source of emissions reductions.

## What is low-emission energy?

Types of low-emission energy include biogas, biomethane and hydrogen. Low-emission energy can have significantly lower greenhouse gas emissions compared to natural gas. The main form of low-emission energy available today is biomethane (also known as renewable natural gas, or RNG), which is made from renewable energy sources such as agricultural and food waste, and wastewater and landfill gas. Biomethane is chemically identical to natural gas and can therefore be delivered by natural gas utilities through the same pipeline system, and burned in the same appliances without any impact to performance.

Interest and activity in biomethane supply in Canada is increasing significantly as provincial mandates and utility opt-in programs contribute to advancing new projects across the country. In 2023, production capacity stood at approximately 9 PJ across 27 facilities. New production facilities coming online over the next several years are expected to more than triple that capacity to 30 PJ. Add to that existing power generation capacity (11 PJ) and heat and direct use applications (5 PJ) and Canada's near term production capacity of biogas and biomethane is forecast at 46 PJ.



## How it works

The operation of the Canadian Low-Emission Energy Registry is founded on the principle that low-emission energy is comprised of two products: (i) the physical molecule and the energy it provides, and (ii) the environmental benefits in the form of avoided $CO_2$ emissions that are quantified and captured in an Environmental Attribute Certificate (EAC). Each product is tracked and traded separately.

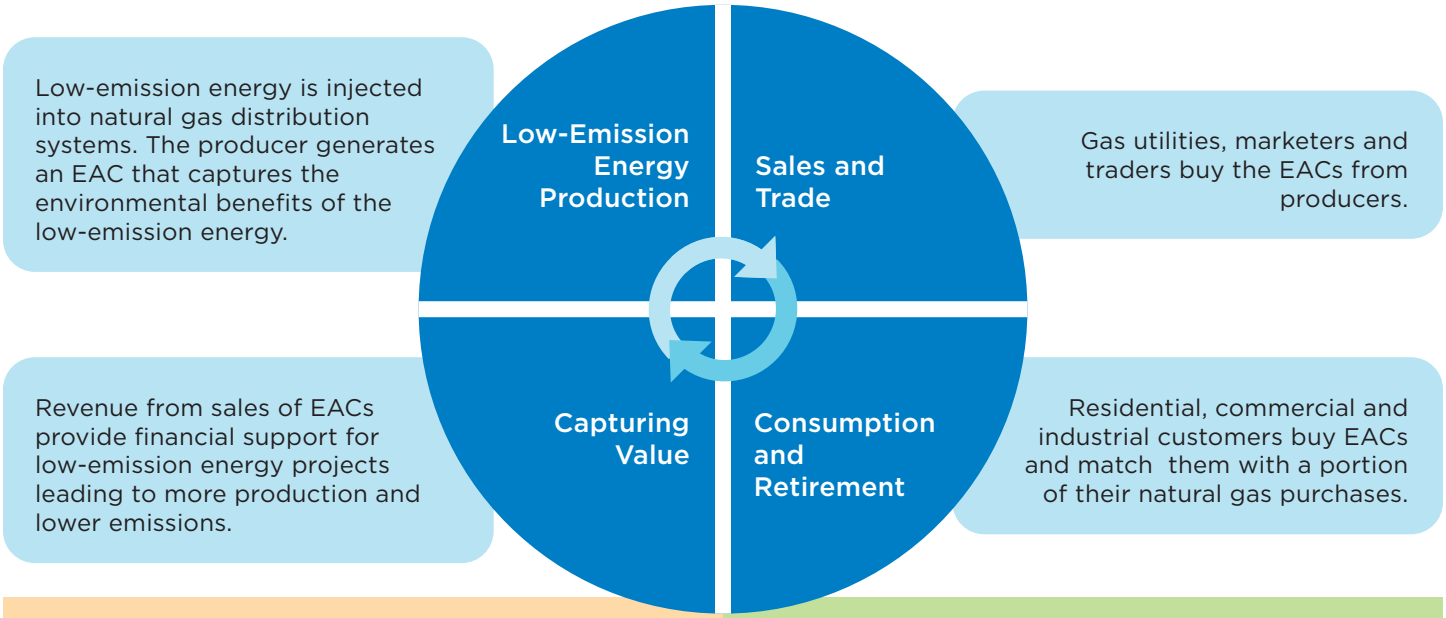
Once the EAC is detached, the underlying energy has no associated avoided emissions and must be treated like any other molecule of conventional natural gas that is sold, transported, and bought through normal gas supply contracts and markets. The buyer of the energy has no claims on the avoided emissions or other environmental benefits and the price paid should therefore reflect the commodity price of conventional natural gas.

The EAC, on the other hand, can move freely between sellers and buyers, without any regard for the constraints of moving biomethane on the underlying gas grid. In order for a buyer of the EAC to make claims about the environmental benefits of the energy they are delivering, they need to "attach" an EAC to a GJ of conventional natural gas, and then "retire" or cancel that EAC once the gas has been delivered and consumed. This allows producers to "book" the emissions reductions of the low-emission energy they have produced in one location, and buyers to "claim" the emissions benefit in a different location.

A registry that tracks the creation, transfer, and retirement of the EAC's is a fundamental requirement to ensuring the integrity of the book-and-claim chain of custody model.

### *What is an Environmental Attribute Certificate (EAC)?*

EACs are used to track low-emission energy from the point of production to the consumer. EACs represent the environmental benefits of one gigajoule of energy produced from low-emission sources and can be sold separately or together with the underlying gas molecules. EACs provide a way for purchasers to demonstrate claims of reducing emissions by using low-emission energy.




***Accreditation***
The CLEER verifies that low-emission energy supplies meet strict environmental criteria.

***Verification***
Independent review of the processes supporting the entire lifecycle of EACs, from creation through to retirement.

## The Project

The Canadian Gas Association is establishing a Canadian Low-Emission Energy Registry that supports a book-and-claim transactional model for EACs.

The foundational element of the project is ensuring the absolute integrity and credibility of the EACs generated from the production of low-emission energy. To ensure this, the project will put in place a governance and certification process for low-emission energy that encompasses the entire lifecycle of the EAC, from creation, through trades between various parties in the value chain, and finally to retirement as the environmental benefits are claimed by the end user.

The CLEER is a crucial platform from which to advocate for changes to existing policy and regulations in order to capture the complete value of low-emission energy in the natural gas supply chain. The CLEER, as a central repository of all low-emission energy supply in Canada, will provide a clear and consistent view on the associated emissions reductions. Trust in the program will increase the understanding and acceptance of EACs in voluntary as well as compliance programs.

The CLEER is the enabler for a growing supply of not only biomethane, but other forms of low-emission energy including hydrogen, all of which lower emissions in Canada's gaseous fuel delivery system and contribute towards Canada's emissions reductions target.