

FuelCell Energy and Toyota Announce Completion of World's First "Tri-gen" Production System

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PLANO, Texas and DANBURY, Conn. (Sept. 7, 2023) – [FuelCell Energy, Inc.](#) (Nasdaq: FCEL) and Toyota Motor North America, Inc. (Toyota) have announced the completion of the first-of-its-kind “[Tri-gen system](#)” at Toyota’s Port of Long Beach operations. The Tri-gen system, owned and operated by FuelCell Energy, produces renewable electricity, renewable hydrogen, and water from directed biogas. FuelCell Energy has contracted with Toyota to supply the products of Tri-gen under a 20-year purchase agreement.

Tri-gen is an example of FuelCell Energy’s ability to scale hydrogen-powered fuel cell technology, an increasingly important energy solution in the global effort to reduce carbon emissions. Tri-gen will enable Toyota Logistic Services (TLS) Long Beach to be the company’s first port vehicle processing facility in the world powered by onsite-generated, 100 percent renewable energy and represents the types of innovative and bold investments the company is making as part of its environmental sustainability strategy.

“By utilizing only renewable hydrogen and electricity production, TLS Long Beach will blaze a trail for our company,” said Chris Reynolds, Chief Administrative Officer, Toyota. “Working with FuelCell Energy, together we now have a world-class facility that will help Toyota achieve its carbon reduction efforts, and the great news is this real-world example can be duplicated in many parts of the globe.”

FuelCell Energy CEO Jason Few said, “FuelCell Energy is committed to helping our customers surpass their clean energy objectives. By working with FuelCell Energy, Toyota is making a powerful statement that hydrogen-based energy is good for business, local communities, and the environment. We are extremely pleased to showcase the versatility and sophistication of our fuel cell technology and to play a role in supporting Toyota’s environmental commitments.”

Tri-gen Supports Toyota’s Port Facilities and Operations

FuelCell Energy’s innovative fuel cell technology will support Toyota’s operations at the port through an electrochemical process that converts directed renewable biogas into electricity, hydrogen, and usable water with a highly efficient, combustion-free process that emits virtually no air pollutants.

1. Tri-gen produces 2.3-megawatts of renewable electricity, part of which will be off-taken by TLS Long Beach to support its operations at the port, which processes approximately 200,000 new Toyota and Lexus vehicles annually.
2. The FuelCell Energy Tri-gen system can produce up to 1,200 kg/day of hydrogen which will provide for TLS Long Beach’s fueling needs for its incoming light-duty fuel cell electric vehicle (FCEV) Mirai, while also supplying hydrogen to the nearby heavy-duty hydrogen refueling station to support TLS logistics and drayage operations at the port. Hydrogen production can be ramped up and down based on needs/requirements.
3. 1,400 gallons of water will be co-produced per day from Tri-gen’s hydrogen production process and will be used by TLS Long Beach for car wash operations for vehicles that come into port prior to customer delivery. This will help decrease the use of constrained local water supplies by approximately half a million gallons per year.

Tri-gen System Benefits the Community

By supporting TLS operations at the Port of Long Beach, Tri-gen’s carbon neutral products are expected to reduce more than 9,000 tons of CO₂ emission from the power grid each year.

“Renewable hydrogen is an important fuel for the future of the Port of Long Beach and the shipping industry,” said Port of Long Beach CEO Mario Cordero. “The renewable hydrogen generated by the ‘Tri-gen’ system that Toyota commissioned, and similar projects, is part of our multi-strategy approach to help fuel the transition of equipment like locomotives, harbor craft, cargo-handling equipment and trucks to zero emissions.”

Tri-gen will also help to avoid more than six tons of grid NOx emissions, which are harmful to both people and the environment, and has the potential to reduce diesel consumption by more than 420,000 gallons per year by using hydrogen-powered fuel cell trucks in port operations.

Additionally, excess electricity not used by TLS will be delivered to the local utility, Southern California Edison, under the California Bioenergy Market Adjustment Tariff (BioMAT) program, adding a renewable, resilient, and affordable baseload electric generation resource to the electric grid.