

Origin Fuel Cell® Quiet Power 4

Clean, Quiet, Transportation for an Island Community



FCEV

Fuel Cell Electric Vehicle
Powered by Methanol



The Problem:



It is estimated that more than half of the noise and pollution in Avalon emanates from the gasoline-powered rental fleet vehicles that are the main-stay for the over 1 million visitors to Santa Catalina Island each year.

To date, gasoline-powered golf cars have been the only means of transportation capable of handling the challenging topography and the quick turn-around business model required by the golf car rental fleets.

The rental fleet operators agree that plug-in electric vehicles have failed every test to date.



The Solution:

Introducing the **Origin Fuel Cell® Quiet Power 4** 



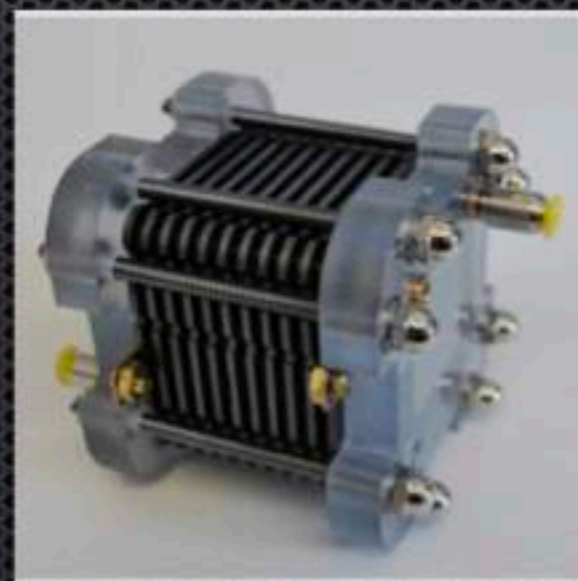
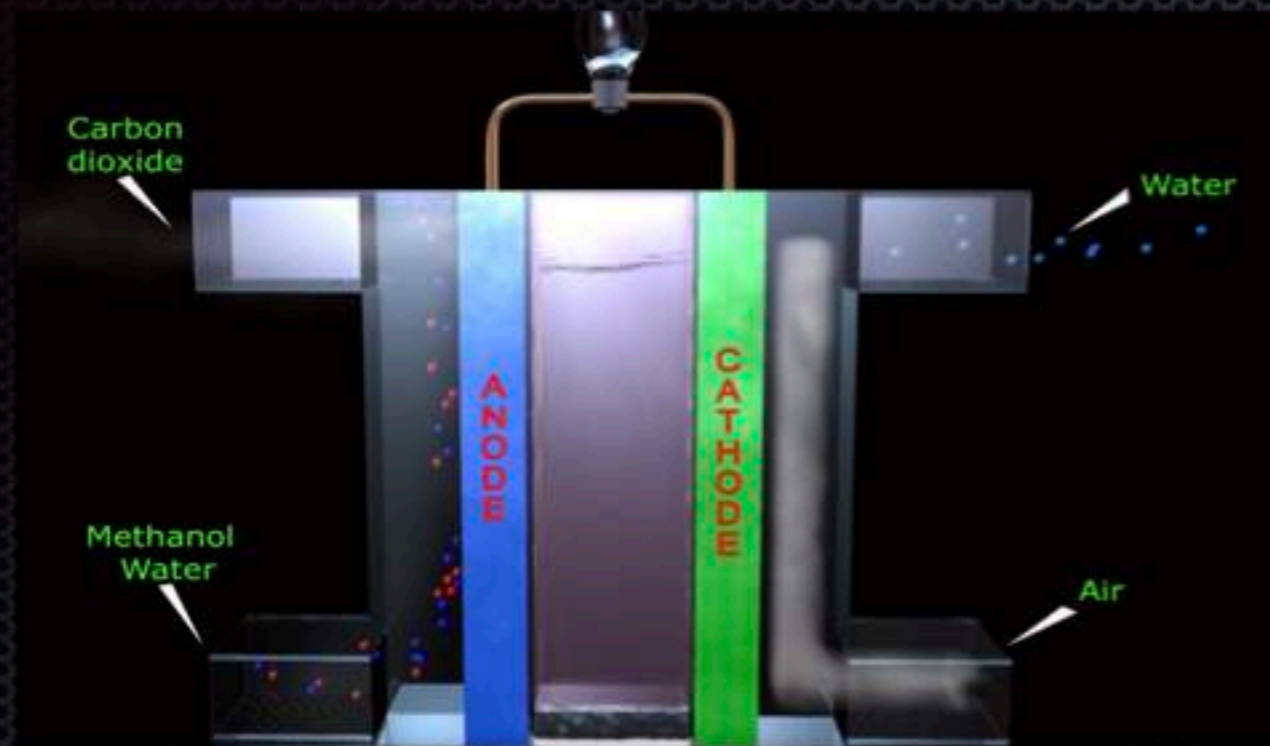
The first and only **production-ready** fuel-cell electric golf car of its kind.

Origin's Technology:



The Quiet Power 4 is built on the frame of the popular Yamaha® 4 Passenger Concierge Golf Car - the workhorse of the Avalon golf car rental fleets.

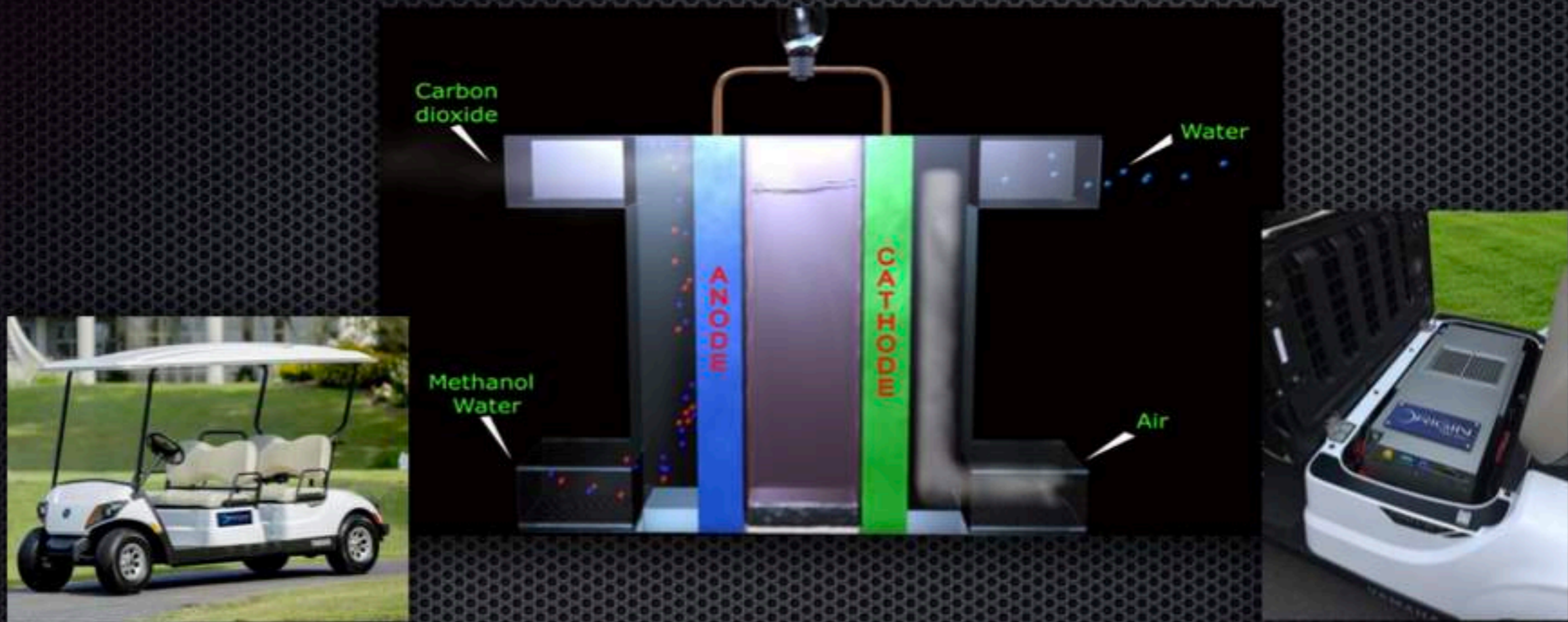




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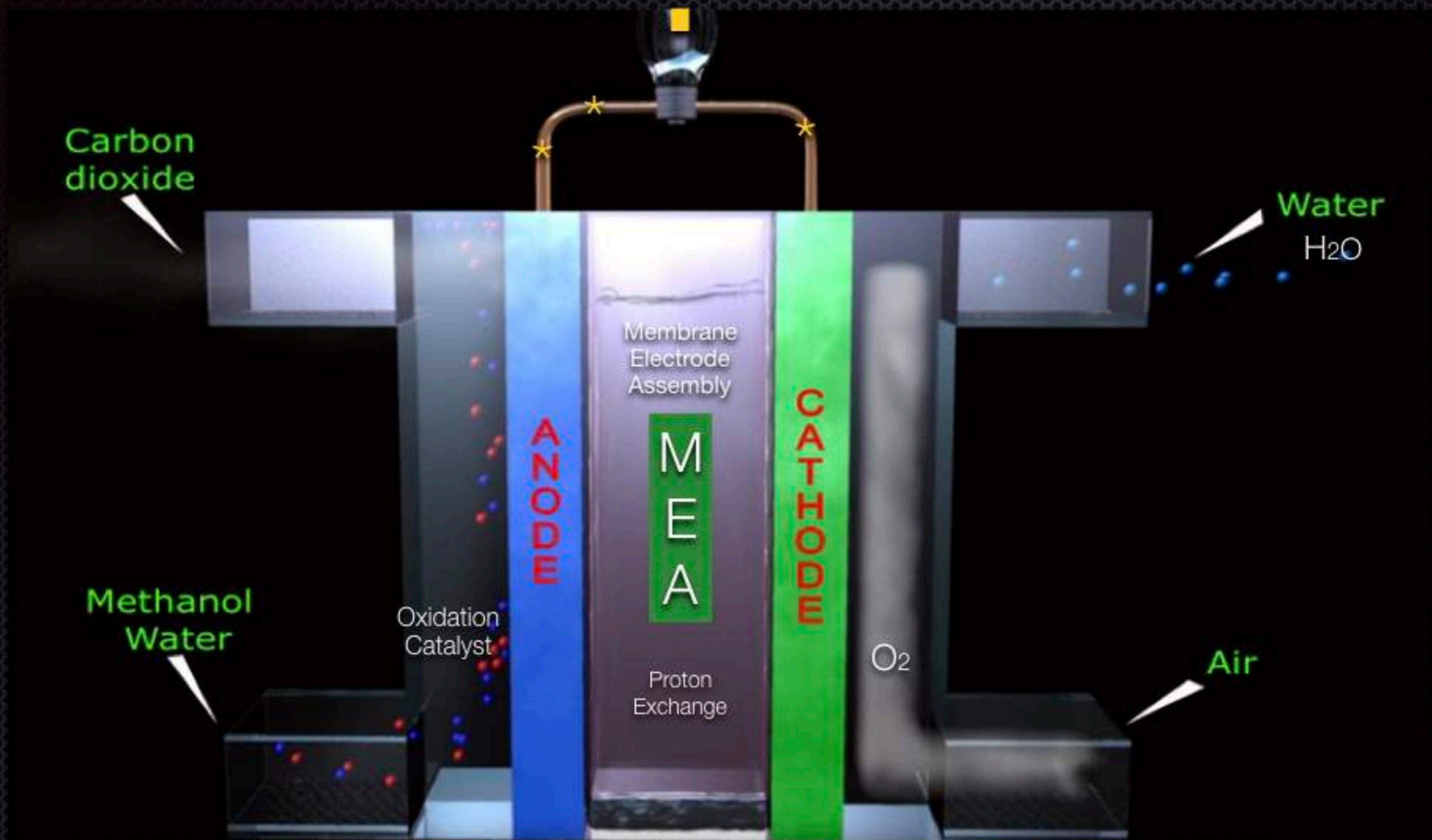
At the heart of the **Quiet Power 4** is our **Direct Methanol Fuel Cell** power plant, that cleanly and quietly generates electricity from liquid **methanol**.

Why Fuel Cell Electric?




Fuel cells generate electricity cleanly and quietly through an electrochemical process requiring no combustion. This electricity, when used in tandem with a compact battery pack, gives a vehicle perpetual electric power with no need to plug-in.





Direct Methanol Fuel Cell (DMFC)

Some of the benefits of **Origin's** technology over traditional gasoline vehicles:

- Quiet operation
- Near zero emissions
- Continuous power & no plugging in 
- Easy refueling in minutes
- 60 miles non-stop operation on a single 3 gallon tank of **methanol**
- Lower operating costs than gasoline golf cars
- Low maintenance
- Methanol** can be generated from a number of feedstocks, making it a **green energy** solution.

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Key Safety Features:

- Fuel cells require no combustion to generate power.
- Methanol is a safer fuel than gasoline. It has a flashpoint (temperature required to burn) that is 55 degrees celsius higher than gasoline.
- Yamaha® Electric Golf Cars come equipped with built-in regenerative braking, which creates a more comfortable and stable driving experience compared to gasoline vehicles.

Origin Fuel Cell® Quiet Power 4

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Methanol refueling capability will be installed at the rental vendor's location in accordance with City of Avalon fire and safety codes.



Dual 55 Gallon Methanol Refueling System

FM and NEC Class 1 Division 2 approved

Note: The Origin technology team is in dialogue with the City of Avalon Fire Department to meet required codes and regulations for both methanol storage and vehicle refueling.

The Trial Run:

In April 2019, the Origin team conducted a successful “endurance” test of the prototype **Quiet Power 4**. The vehicle ran the rigorous 12-mile scenic route for 6 hours straight, simulating a typical rental day during the peak summer season.



Watch the public video on Vimeo at <https://vimeo.com/336024604> or go to our website at www.originfuelcell.com



Origin Fuel Cell® Quiet Power 4

For more information, visit us at www.originfuelcell.com