



Mass Transit Travels Clean with the

Latest Energy-Efficient Technology from UTC Power

Power

- Education
- Health Care
- Hospitality
- Manufacturing
- Municipal
- Office
- Retail
- Mass Transit**
- Special

UTC Power's PureMotion™ fuel cell system drives a revolutionary new bus

The positive environmental impact of emission-free bus transportation would be considerable. While buses and heavy-duty commercial vehicles represent just 8 percent of the nation's vehicle miles traveled, they produce more than 45 percent of U.S. on-road vehicles' NOx emissions and almost 70 percent of particulate matter emissions. Through a visionary partnership, UTC Power in Connecticut, California-based AC Transit, SunLine Transit and ISE Corporation, and VanHool in Belgium are working to revolutionize the public transportation sector with hydrogen-fueled hybrid-electric fuel cell buses. The end result is a zero-emission, super-efficient and quiet bus.

"This project proves that we can make alternative fuel technology work today, not at some vague, remote point in the future."

C. Mikel Oglesby
General Manager, SunLine Transit Agency



VanHool A330 Fuel Cell Bus

Zero Emissions

Zero. Zip. Nada. No matter how you say it the VanHool A330 fuel cell bus produces no NOx, no particulate nor any other harmful emissions – contributing to a cleaner future.

High Efficiency

Fuel cell power systems are inherently more efficient than traditional technologies. A fuel cell is an electrochemical device that combines hydrogen fuel and oxygen from the air to produce electricity, heat and water. Since the fuel is converted directly to electricity, a fuel cell can operate at much higher efficiencies than internal combustion engines, extracting more energy from the same amount of fuel. Fuel cells also have no moving parts, so there are no mechanical losses caused by friction, which enables even greater efficiencies to be achieved.

super-efficient

reliable

clean

energy-saving

alternatives



powering a cleaner future



UTC Power

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Fueled by Clean Hydrogen

Industry in the United States uses over 90 billion cubic meters of hydrogen a year. If all this hydrogen was used in transportation applications, it could fuel as many as 30 million cars.

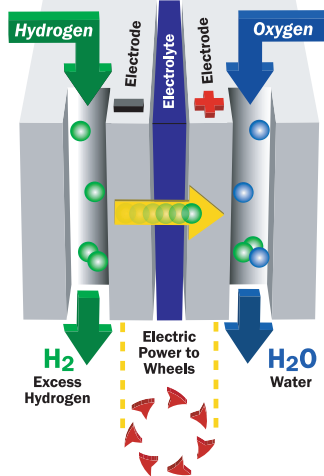
Hydrogen is non-toxic and non-polluting.

Hydrogen is the most plentiful element on earth.

Hydrogen has been produced, transported and used safely for over 50 years.

Hydrogen and oxygen are combined in fuel cells to produce water and electricity.

Hydrogen produced by renewable sources such as wind and solar electric generators is sustainable and environmentally responsible.



The PureMotion™ fuel cell system is based on UTC Power's proton exchange membrane (PEM) technology. The system operates at near-ambient pressure, which provides a unique advantage – the system requires no compressor. This feature, combined with the hybrid-drive system, enables superior fuel economy and system reliability.

The overall impact of these multiple efficiency gains is significant. In fact, the PureMotion™ Model 120 fuel cell power system and ISE Corporation's hybrid-electric drive system enable the VanHool A330 bus to achieve more than two times the efficiency of a conventional diesel-powered bus.

Extremely Quiet Operation

The fuel cell component of this innovative bus has no moving parts and operates at near-ambient pressure, so it does not require an air compressor. This design results in a cabin noise environment that rivals a luxury sedan – ensuring tranquil travels for passengers and eliminating noise pollution for pedestrians and their communities.

Environmentally Responsible

One PureMotion™ Model 120 fuel cell power system reduces NOx emissions equivalent to removing 85 cars from the roadways per year. In addition, this system reduces particulate matter emissions equivalent to removing 170 cars* per year and creates the same environmental benefits as planting 30 acres** of forest.

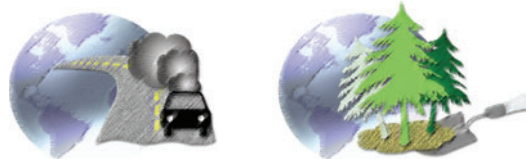
“As a public transit agency, one of our goals has always been to provide the best possible service. Providing a service that doesn't pollute our neighborhoods is the next logical step.”

Rick Fernandez
General Manager, AC Transit

Compared to the average U.S. powerplant emissions (Ref: 2002 data, U.S. EPA, DOE/Energy Information Administration).

* Each car assumed to generate 38 lb NOx/year (Ref: U.S. EPA).

** Each acre of forest assumed to absorb 1.3 ton of carbon per year (Ref: International Panel on Climate Change).



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1.866.900.POWER www.utcpower.com