



Champaign-Urbana Mass Transit District

- ^A million annual rides (11.5M in 2019)
- ✓ 59,000 students
- 118 buses
- - 100% low and zero emission
 - 106 Low Emission Diesel Electric Hybrid 12 Zero Emission H2 Fuel Cell Electric









Reduce fossil fuel consumption



Truly zero emission

By harnessing the power of the sun to produce our own hydrogen fuel, we do not need to rely on electricity made from burning fossil fuels.

From sun to street – hydrogen fuel cell electric buses are truly zero emission.



Why not battery electric?

Over time, a larger Fuel Cell Electric Bus (FCEB) fleet is less expensive to procure compared to a Battery Electric Bus (BEB) fleet.

The largest expense for a BEB fleet is battery replacement; FCEBs last longer because the system keeps batteries charged at an optimal state.



Powered by Solar

2 MW solar array

3M kWh annual production

5,500 panels **8 acres** of land leased from neighbor

Direct connection to hydrogen station

On-Site H2 Station

ZERO EMISSION

150

1 MW420 kg max1,000 kg50' by 250'7-10 minute350 barelectrolyzerdaily productiongaseous storagefootprintrefuelingrefueling pressure

URBANA MASS TRANSIT DISTRICT

EL CELL ELECTRIC

CHAMPAIGN-URBANA MASS TRANSIT DISTRICT

FOR ALL

Hydrogen Production Station

-10-1

Fueling Station

Maintenance Facility

110100

Solar Array



2022 FTA Award "Most Innovative"

Most Innovative: Champaign-Urbana Mass Transit in Urbana, Ill., demonstrated the use of creative solutions to implement its climate action strategy.



How does hydrogen fuel cell technology work?



Fuel cells separate electrons from hydrogen molecules. The electrons generate electricity to charge the battery while the remaining hydrogen ions combine with oxygen to create water.

While traditional diesel engines produce a lot of waste, the only product emitted from a hydrogen fuel cell bus is water.

Is it safe?

When used in accordance with proper guidelines, **hydrogen fuel is safe.** Just like diesel and gasoline, there are inherent risks in handling any flammable gas or liquid. In many ways, hydrogen is even safer than conventional fossil fuels; as the simplest element in nature, it is truly a non-toxic fuel source.

As the smallest, most abundant element in the universe, it is 14 times lighter than air, so the H2 fuel tanks are kept on top of the bus with safeguards to prevent leaks. Unlike other fuels which risk pooling on the ground as hazardous contaminants, non-toxic hydrogen safely rises into the sky at 45 miles per hour.



Our fleet: 60-foot New Flyer XHE bus



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Coaches	2	CTE validation tests in 2024: Range estimate for $60' = 275$
Range	250 miles	Fuel economy for 60' = 7 mi/kg
Fuel Cell	85 kW Ballard	
Batteries	150 kWh of storage	
H2 Capacity	67.5kg	
H2 Tanks	9 type IV composite	He Saved a Seat for Yay MTD 2102 ZERO EMISSION
Curb Weight	48,600 lbs.	
		CLEANER AIR FOR ALL

Our fleet: 40-foot New Flyer XHE Bus

Coaches 10 Range 370 miles Fuel Cell 100 kW Ballard Batteries 135 kWh of storage H2 Capacity 37.5kg H2 Tanks 5 type IV composite Curb Weight 31,360 lbs.



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Coaches10Range370 milesFuFuel Cell100 kW BallardBatteries135 kWh of storageH2 Capacity37.5kgH2 Tanks5 type IV compositeCurb Weight31,360 lbs.

CTE validation tests in 2024: Range estimates for 40' = **299 - 337** Fuel economy for 40' = 11.4 - 12.8mi/kg

13S SILVER FAR/PA

MD

2305

AIGN-URBANA MASS TRANSIT DIST



Station Expansion



Hydrogen deliveries (liquid) \$9 million Capacity: 70 additional buses

OR

Onsite hydrogen production

\$25 million + Capacity: 45 additional buses

Current Production Station



Expanded Production Station



Contact us

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