GOLDEN EMPIRE TRANSIT DISTRICT
MINUTES OF THE REGULAR MEETING
OF THE BOARD OF DIRECTORS

OCTOBER 22, 2019
5:30 PM

1830 GOLDEN STATE AVENUE
BAKERSFIELD, CALIFORNIA 93301

DIRECTORS PRESENT:

Jim Baldwin	Carlos Bello	Leasa Engel
Rueben Pascual		

DIRECTORS ABSENT: Cindy Parra

ATTORNEY PRESENT: Jim Worth

STAFF PRESENT:

Karen King	Steve Barnes	Deidre Brown
Jeanie Hill	Jill Smith	Denise Sailes
Chris James	Candra Cheers	Ricardo Perez
Robert Williams	Jamie Gail	Sharon Pierce

OTHERS PRESENT:

Bob Snoddy	Sydney Krueger	Ed Krueger
Jordan Tuitt	Temecia Ricks	

The Chair called the meeting to order at 5:31 p.m.

PLEDGE OF ALLEGIANCE

Ms. Jeanie Hill led the pledge of allegiance to the flag of the United States of America.

(Director Bello entered meeting at 5:32 p.m.)

APPROVAL OF CONSENT AGENDA

Director Pascual moved and Director Bello seconded a motion to approve the consent agenda. The motion carried with four (4) ayes and one (1) absent (Parra).

PUBLIC COMMENTS

Ms. Temecia Ricks commented that customers calling the customer service line for the fixed route do not know whether you are still on hold since there is no music or recorded message. She suggested that GET consider expanding times in the evening as many riders work late and/or attend classes. Ms. Ricks also asked if a phone call or text message could be sent when the bus arrives.

FUEL CELL BUS PRESENTATION

Mr. James introduced Ms. Sydney Krueger with KTC. Ms. Krueger introduced Mr. Jordan Truitt with Airgas. Ms. Krueger and Mr. Truitt gave a presentation on hydrogen fuel cell buses. (See Attachments A-D). This was an informational item only.

ENVIRONMENTAL MANAGEMENT SYSTEM REPORT

Mr. James introduced Ms. Jamie Gail, GET's Environmental Management System Coordinator. Ms. Gail shared information on the purpose of GET's EMS and then presented a training module on GET's EMS program. This was an informational item only.

MAINTENANCE BUILDING FLOOR RESURFACE

Mr. James presented information on the status of the Maintenance Building floor condition. After some discussion, Director Engel moved and Director Bello seconded a motion to award a contract to Terry Bedford Concrete in the amount of $173,305 to resurface the maintenance shop floor and provide a 3-year maintenance plan based on the lowest responsive and responsible bid. The motion carried with four (4) ayes and one (1) absent (Parra).

FIRST QUARTER FY 2019-20 PERFORMANCE REPORTS FOR MOTOR BUS AND DEMAND RESPONSE SERVICES

Mr. Perez stated that GET-A-Lift total unlinked passenger trips (14,417) increased 7.2 % for the quarter compared to the same period last year. RYDE microtransit service was initiated on April 7, 2019 and total boardings for the first quarter of FY 2019-20 were 6,695 compared to 3,523 in the fourth quarter of FY 2018-19. The operating ratio was 10.69% and boardings averaged 1.6 per revenue hour. Total unlinked passenger trips on fixed routes were 1,529,928, a 3.7% decrease from the same quarter one year ago. This was an informational item only.

2019 STRATEGIC PLAN UPDATE

Ms. King reviewed the status of several of the initiatives of the 2019 Strategic Plan. This was an informational item only.

SEPTEMBER 2019 FINANCIAL POSITION AND RESULTS OF OPERATIONS

Mr. Barnes reviewed September 2019 financial reports. This was an informational item only.

FUTURE AGENDA ITEMS/BOARD COMMENTS

Director Bello stated that information received at the APTA TRANSform Conference was very educational, particularly on zero emission technology.

Director Pascual commented that the hydrogen fuel cell presentation was very informative. He asked if GET is looking to expand employer-subsidized commuter service, i.e. Grimmway.

Director Baldwin commented that decisions need to be made regardless of the plans of the California High Speed Rail Authority (CHSRA).

CHIEF EXECUTIVE OFFICER'S REPORT/COMMENTS

Ms. King stated that flu shots are available for employees until 8 pm this evening in the old Boardroom. Ms. King thanked the Board for the opportunity to attend APTA's annual conference. She shared that a copy of APTA's Strategic Plan was placed at their location. The Board meeting for December will be held on the first Tuesday, December 3rd at the Sheraton Four Points. The workshop will begin at 11:30 a.m. followed by a Board meeting, if necessary, at a time certain of 5:30 p.m. Ms. King commented that two additional applications have been received for the Marketing Manager position that appear very promising. Both of the applicants are highly qualified.

ADJOURNMENT

There being no further business, Director Baldwin moved that the meeting be closed. The meeting concluded at 7:38 p.m.

Respectfully submitted,

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Secretary of the Board of Directors

ATTACHMENT A

Fuel Cell Electric Bus Fact Sheet

Overview

- Fuel cell electric buses provide zero-emission transit with range and performance comparable to diesel and CNG, and significantly better fuel economy.
- More than 300 FCEBs have been deployed around the world and operated millions of miles in revenue service
- Transit agencies in the U.S. operate 27 FCEBs. The majority are at AC Transit and SunLine Transit in California.
- More than 30 additional buses planned for deployment in California in the next two years.
- FCEBs meet FTA's Buy America requirements.
- Transit agencies in the EU operate 87 FCEBs; 163 additional buses are planned for deployment in the next two years.
- China operates 20 FCEBs and has confirmed orders to operate 500 FCEBs in the next two years.
- Two transit bus manufacturers, New Flyer Industries & ElDorado National, supply fuel cell electric buses in the U.S.
- Ballard Power Systems and Hydrogenics are the primary suppliers of fuel cell systems for transit buses.
- Most of the hydrogen fuel used in transit bus applications is delivered from large-scale central production facilities or produced renewably on-site.
- Fuel cell technology developed for the transit bus market is beginning to diffuse into other heavy-duty applications like light rail, drayage trucks, and parcel delivery trucks.

SunLine Transit Agency

- First transit agency to completely convert to CNG
- Operates five FCEBs, expanding to 19 by EOY 2018
- FCEBs have traveled 762,000 miles (October 2016)

Alameda-Contra Costa Transit District

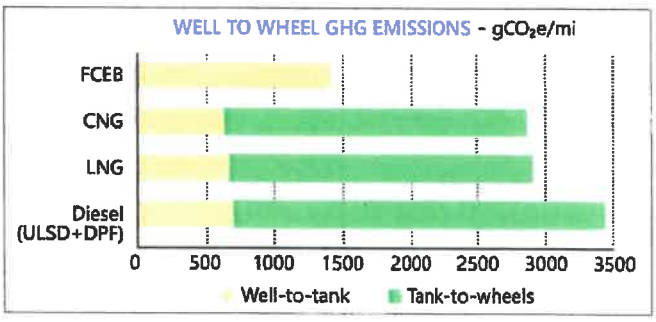
- Operates 13 FCEBs, the largest fleet in North America. Expanding fleet in next two years.
- FCEBs have traveled 1.6 million miles and carried 4 million passengers (October 2016)
- The fleet averages 36,000 miles/month
- The lead fuel cell has more than 23,000 hours—nearly the half-life of the bus.

Orange County Transportation Authority

- Took delivery of first FCEB in May 2016, an ElDorado National bus manufactured in Riverside, California
- Plans to add 10 New Flyer FCEBs in 2018

Environmental Benefits

Greenhouse gas modeling[1] shows that FCEBs running on hydrogen produced from natural gas reduce CO_2 by more than half compared to a diesel bus. When hydrogen is made from renewable sources—such as wind- and solar-power or biogas—GHGs are nearly zero.



From well to wheels, FCEBs have zero criteria pollutants (NOx, VOCs and PM). Whether hydrogen is made from natural gas or renewables at "upstream" central locations, emission control is more effective compared to fuels burned in a large number of individual transit buses with internal combustion engines.

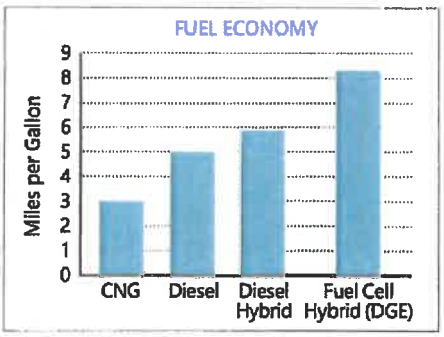
Zero-emission FCEBs are a benefit to riders and drivers, and to the communities in which they operate. Many of the early-market FCEBs are being placed in disadvantaged communities where clean buses can make the biggest impact on the health-related impacts of poor air quality.

1 CaFCP analysis using GREET model with support and verification by Argonne National Laboratory and CARB

Performance and Range

Zero-emission FCEBs offer the same full vehicle performance—air conditioning, gradeability, and highway speeds—on all types of transit routes. With range of 240-310 miles per fill, FCEBs are therefore a "one-to-one" replacement for conventional buses.

Because FCEBs are electric buses that make electricity from hydrogen, the are about twice as efficient than buses powered by combustion engines. By converting more of the fuel energy into motive power, fuel cell buses have the potential to reduce overall fuel costs.



Source: Public Transit Special Issue 2008 & NREL Reports

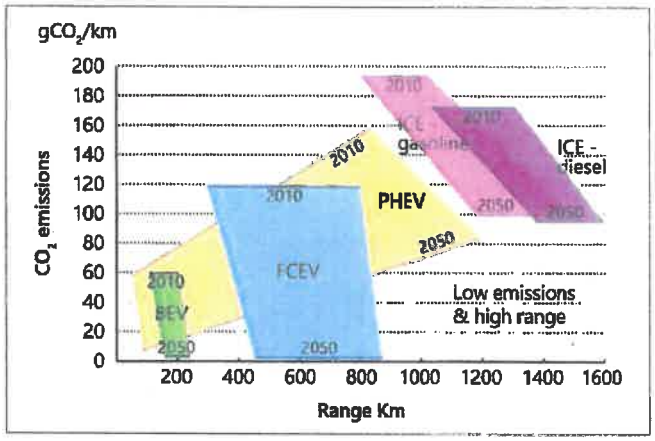
Costs

Capital - FCEB capital costs are about $1.3 million per bus, a reduction of more than 60% since 2008. In future years, manufacturers believe that costs will decrease to $900,000 per bus,[2] with a long-term target of $600,000[3].

Fuel - Hydrogen cost ranges from $5.00–$8.00/kilogram[4] at the three California transit fueling sites; approximately $0.71–$1.14/mile. As more buses are deployed, the increased fuel demand is expected to lower the fuel price more on a per-mile basis.

Maintenance - Costs of the SunLine and AC Transit fuel cell buses under warranty have been roughly the same as the agencies' conventional buses. In the long-term, however, there is significant potential for operational cost savings because fuel cell systems are solid-state devices without moving parts and the electric propulsion systems are far more durable and easier to maintain than conventional systems. Preventative maintenance and parts replacement is expected to be less than for diesel and CNG buses.

FCEBs fall within the "low emissions and high range" zone



Source: Urban buses: alternative powertrains for Europe report – FCH JU

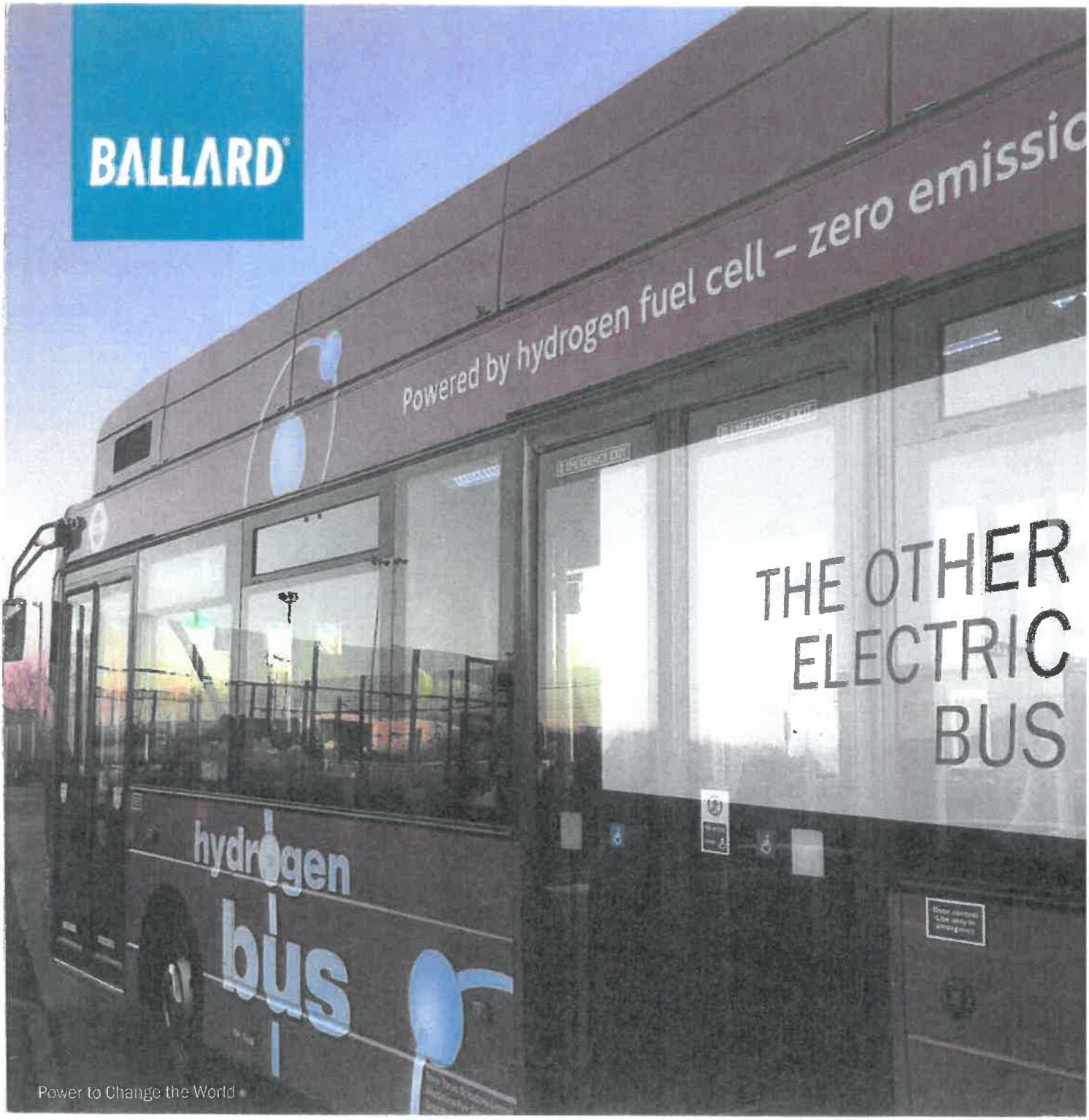
Scalability

Hydrogen stations at transit yards are built to be scalable. The equipment is similar to a CNG station, and therefore a station can increase its capacity from 40 to 400 buses by upgrading the compression and storage equipment, and adding dispensers, while not entailing ten times the investment. Hydrogen stations do not typically need vast electrical or gas utility upgrades to scale up to a commercial level.

Disadvantaged Communities

FCEBs serve riders of necessity in disadvantaged communities throughout California. This interaction between Californians and clean transit technology is important in establishing a link between the State's investments and a broad demographic of riders.

2 May 2014 New Flyer letter to CARB, as referenced in www.arb.ca.gov/msprog/tech/techreport/fc_tech_report.pdf
3 US DOE 2012 FCEB targets at www.hydrogen.energy.gov/pdfs/12012_fuel_cell_bus_targets.pdf
4 When operating five or more FCEBs per site.


BALLARD
Powered by hydrogen fuel cell – zero emissio
THE OTHER
ELECTRIC
BUS
hydrogen
bus
Power to Change the World

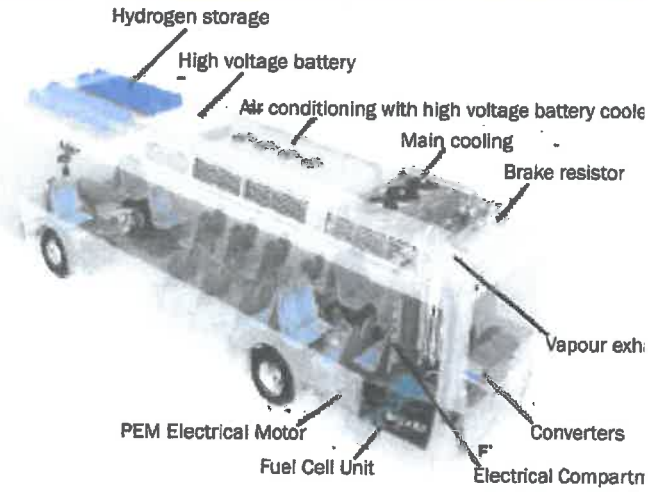
BALLARD

A FUEL CELL BUS IS AN ELECTRIC BUS

A fuel cell bus is an electric vehicle that uses compressed hydrogen gas as its energy source and storage.

The fuel cell power module on board of the bus generates electricity through an electro-chemical reaction leaving only water and heat as by-products.

- Same electric drivetrain as battery electric buses
- Battery-fuel cell hybrid power train configuration
- Fuel cells power electric drive and recharge batteries
- Common bus platform as a battery electric bus



Ballard's heavy duty fuel cell power modules are designed for transit buses with configurations from 30kW to 100kW

Durable | Fuel efficient | Versatile | Environmentally friendly

FCveloCity®-HD

Fuel cells enhance the performance of electric buses

1:1
REPLACEMENT OF CONVENTIONAL VEHICLES

up to 450km /300mi
proven range

RAPID REFUELLING SPEEDS
(6 to 10 minutes)

SIGNIFICANT REDUCTION IN
VEHICLE WEIGHT
(more passengers)

Fuel cell electric buses powered by Ballard have demonstrated performance

24H
FUEL CELL MODULE AVAILABILITY
>97 %

>30,000 hours
STACK DURABILITY

OPERATING IN
CHALLENGING
ROUTES AND CLIMATES

over 13m km/ 8m mi
OF PASSENGER SERVICE

MORE THAN
15 years
OF ROAD EXPERIENCE

Hydrogen provides flexibility to transit fleets

- SCALABLE TO SUPPORT HUNDREDS OF BUSES PER DEPOT
- RENEWABLE SOURCES (WIND, SOLAR, BIOGAS)
- NO ROADSIDE INFRASTRUCTURE
- SMALL FOOTPRINT

We are committed to sustainable mobility and clean air for everyone.

Fuel cell electric buses delivers zero-emission transit without compromise in service

"We treat the fuel cell buses like any other bus in our fleet. The buses are deployed in all conditions on all routes and they are meeting availability targets."

Lauren Skiver, CEO and General Manager of Sunline Transit Agency

Dedicated service

- 3 Global service centers
- Call center (24 hours a day, 7 days a week)
- Regional sales and service teams
- Regional spare parts depots
- Training center & repair center
- After-sales service contracts

SHIPPED MORE than 1000 heavy duty *modules*

over 100 fuel cell BUSES *powered*

CONNECT WITH BALLARD

Ballard Power Systems Inc.
9000 Glenlyon Parkway,
Burnaby, BC, V5J 5J8, Canada
marketing@ballard.com
(P) +1-604-454-0900
www.ballard.com
www.zeroemissionbus.org

ATTACHMENT C

NEW FLYER OF AMERICA

TRANSIT

Technical Summary

xcelsior CHARGE H2™ 40' Fuel Cell-Electric Transit Bus

MEASUREMENTS

Length	41' (12.5m) including bumpers
Roof Height	11' 1" (3.4m)
Step Height	14" (356mm)
Front Step Height Kneeled	10" (254mm)
Interior Height - Floor to Ceiling	79" (2m) over front and rear axle; 95" (2.4m) mid-coach
Tire Size	305/70R22.5
Aisle Width	22" - 24"
Wheelbase	283.75" (7.2m)

ENGINE

Fuel Cell	Ballard FCvelocity-HD85
Net Power	85 kW

PROPULSION

Propulsion System	Siemens PEM 1D82022 Electric Drive
Rated Power	210 kW
Rated Torque	1,475 lb-ft

ENERGY STORAGE SYSTEM

Hydrogen Storage Volume	37.5 kg
Battery	A123 Systems - 100 kWh
Range[1]	300+ miles (fuel cell & battery combined)

ACCESSIBILITY

Passenger Doors	1 Vapor Slide Glide - Electric 1 medium Ameriview Vapor Slide Glide
Wheelchair Accessibility	660lb (299kg), 32" (813mm) wide, 1:7 slope. Flip out NFIL ramp, front door
Wheelchair Positions	2

CAPACITY

Seats/Standees	40 / 42
Total Passengers	82

WEIGHT

Curb Weight	32,750 lb.
GVWR	43,820 lb.

TURNING RADIUS

Turning radius (body, with aluminum wheels)	43.5' (13.3m)

CLEARANCES

Approach/Breakover Angles/Departure	9°/9°/9°

MAIN COMPONENTS

Electrical System	Vansco Instrument Panel Cluster with LCD touch display screen
Cooling System	Modine 9 fan EMP radiator for fuel cell rad traction cooling
HVAC	Thermo King TE15 rear A/C unit

FEATURES

Diagnostic & Monitoring System	New Flyer Connect®
Additional Safety	Apollo video surveillance

[1]Range per FTA Altoona test protocol - HVAC off.

ATTACHMENT D

ENC

HEAVY DUTY | ACCESSIBLE LEADER | INNOVATION

www.eldorado-ca.com

SPECIFICATIONS

Based on the proven Axess platform, the Axess Fuel Cell (FC) and new Axess Fuel Cell/Battery Dominant (FCBD) offer proven solutions to the Zero-Emissions challenge. With water and heat being the only tailpipe emissions, the Axess Fuel Cell supplies true zero-emissions performance with a proven range of over 250 miles. With over 500,000 miles of transit validated service, the Axess FC line is ready for your toughest transit applications. **Your Zero-Emissions Transit Solution.**

- Transit tested, heaviest-duty 100% stainless steel Axess low-floor bus structure, designed and built in the USA
- Proven BAE HybriDrive Propulsion System with millions of transit revenue miles
- Choice of hydrogen Fuel Cell or scalable Fuel Cell/Battery Dominant configurations
- Electrified subsystems including air compressor, A/C unit, passenger doors, cooling fans and power steering
- Only heavy-duty low-floor bus offering FMVSS 209 certified 3-point passenger seat belts

OUR VEHICLES CONNECT AND PROTECT PEOPLE AROUND THE WORLD EVERYDAY.

www.revgroup.com

REV

Vehicles for life

STANDARD CHASSIS EQUIPMENT

Drive System	BAE HybriDrive
Fuel Cell	Ballard HD6 (150KW)
Hydrogen Capacity	Up to 50 kg
Range	Up to 260 miles
Brakes	S-Cam drum air brakes with regenerative power
Axles	Arvin Meritor, drop I-beam front & conventional rear
Suspension	Full air ride; two bag front, four bag rear

STANDARD BODY EQUIPMENT

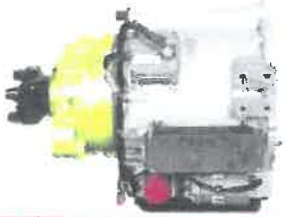
- BRT front end appearance package
- 100% welded 304 Grade stainless steel monocoque safety cage
- Non-corrosive composite exterior skins
- I/O Controls G3 multiplex electrical system
- Seatbelt certified passenger seat track
- LED interior and exterior lighting
- Front or center door ADA compliant wheelchair ramp
- Vapor Slide/Glide passenger doors
- One color full exterior body paint

POPULAR OPTIONS

- Full BRT package with hidden frame passenger windows
- Scalable Fuel Cell/Battery Dominant (FCBD) system for vehicle range optimization
- Rear mounted HVAC
- Assortment of passenger seating and wheelchair securements
- Custom Luggage and stroller/grocery racks
- GPS, AVL, APC, ITS & other electrical accessories
- Electrically operated slide/glide passenger doors

SPECIFICATIONS

MODEL	40'
Maximum Passenger Capacity	43
Overall Length	484"
Overall Width	102"
Overall Height	140"
Approach Angle	8.7°
Breakover Angle	9°
Departure Angle	8.7°
Wheelbase	275"
GVWR	44,300#

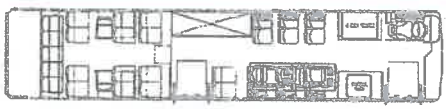


BAE HYBRIDRIVE

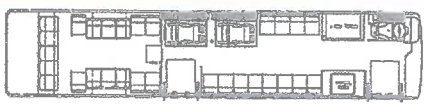
BALLARD FUEL CELL

LI-ION BATTERY

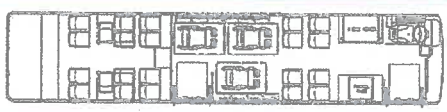
POPULAR FLOOR PLANS



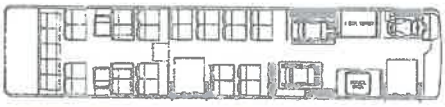
40' Low Floor
27 + 2 Wheelchairs or 33 Passengers



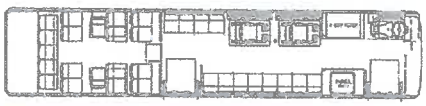
40' Low Floor
29 + 2 Wheelchairs or 35 Passengers



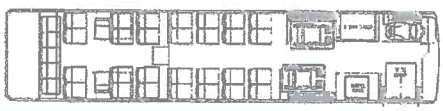
40' Low Floor
27 + 3 Wheelchairs or 37 Passengers



40' Low Floor
31 + 2 Wheelchairs or 37 Passengers



40' Low Floor
31 + 2 Wheelchairs or 37 Passengers



40' Low Floor
35 + 2 Wheelchairs or 41 Passengers

Due to ongoing engineering improvements, ENC reserves the right to make changes without notification.

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