

BALLARD®

**FUEL CELL POWERED
ZERO EMISSION**

TRANSPORTATION



Fuel Cell Systems for Motive Applications

Peter Bach
Stack & Systems Architect, Technology & Product
Development

Company Introduction

BALLARD®

- **38** years as fuel cell leader
- **24** years listed on TSX & **22** years on Nasdaq
- **500** employees
- **2,000** patents/applications
- **320 MW** of fuel cell products shipped
- **3.0 million** MEAs manufactured
- **3,000** stationary systems delivered
- **10 million kms** in revenue service by fuel cell buses
- **4** strategic shareholders



*Ballard HQ facility
Vancouver, B.C., Canada*



**United
Technologies**



AngloAmerican





NISSHINO

Power Products for Sustainable Mobility





BALLARD®

- Mission:** Meet customers' power needs through delivery of high value fuel cell products that provide zero emission motive power trains

MARKETS

			
Material Handling	Medium Duty Truck	Transit Bus	Light Rail

PRODUCTS

Fuel Cell Stacks	Motive Modules		
			
Air-cooled FCgen®-1020ACS Liquid cooled FCvelocity®-9SSL	FCveloCity®-MD (30kW)	FCveloCity®-HD (60kW-100kW)	FCveloCity®-XD (up to 200kW)

Automotive Market Experience

BALLARD®

- Ballard PEM fuel cell products continue to lead the industry in performance, durability, and overall road experience.
- With over 38 years of product development experience, Ballard has:
 - Supported **4** major automotive development programs
 - Supplied products to **10+** small fleets
 - Supplied **>500** fuel cell products and **1,000s** of engineering hours
 - Invested more than **\$1B** in the development of PEM fuel cell technology
- Currently executing a 6-year, C\$140 million. engineering services contract with Volkswagen /Audi.



DAIMLER



Audi



BALLARD

**FUEL CELL POWERED
ZERO EMISSION**

TRANSPORTATION



Thank You

www.ballard.com