

Driving Growth – Clean Energy Solutions for Business



John Sheridan - President and Chief Executive Officer



Commercialization Timelines

2

BALLARD[®]
power to change the world[®]



materials handling



backup power



residential cogeneration



automotive

2007 2008 2009 2010 2011 2012 2013 2014 2015

pre-commercial, positive gross margin sales

commercial volumes

market commercialization timelines based on Ballard projections

making fuel cells a commercial reality

Materials Handling Market



3

BALLARD[®]
power to change the world[®]

Market opportunity:

- replace lead acid batteries in electric industrial vehicles
 - forklift battery market: \$1B+ in annual global sales
-

Market drivers:

- longer run times
 - no loss of power during shift
 - frees up warehouse and factory capacity
-

Environmental Benefit:

- eliminates need for lead acid battery handling and storage
- reduces grid electricity charging requirements



Back-Up Power Market



4

BALLARD[®]
power to change the world[®]



Market opportunity:

- replace lead acid batteries in telecommunications backup installations
- market potential: \$2B+ in annual battery sales

Market drivers:

- extended run time
- reduced maintenance requirements = lower lifecycle costs
- wide operating temperature range

Environmental Benefit:

- eliminates need for lead acid battery handling, storage and charging
- eliminates need for diesel generator backup power



Residential Co-Generation Market



5

BALLARD[®]
power to change the world[®]



Market opportunity:

- replace hot water boilers in Japanese homes with integrated fuel cell system
- market opportunity 1.8 million homes each year in Japan
- reduces need for high-cost grid electricity & eliminates conventional water heaters

Market drivers:

- subsidies: '05: \$26M / '06: \$32M / '07: \$28M
- primary energy consumption cut by 20-30% (annual savings to homeowner ~ \$600)

Environmental Benefit:

- CO2 emissions reduced 30-40% ...equivalent to 1 ton of CO2 per household annually

Automotive and Bus Market



6

BALLARD[®]
power to change the world[®]



Market opportunity:

- replace internal combustion engines
 - large market...but long time to commercialization
 - passenger vehicles, buses and trucks
 - fuel cell propulsion systems, fuel cell hybrids
-

Market drivers:

- reduced emissions / government regulations
 - improved performance
 - OEM competition
-

Environmental Benefit:

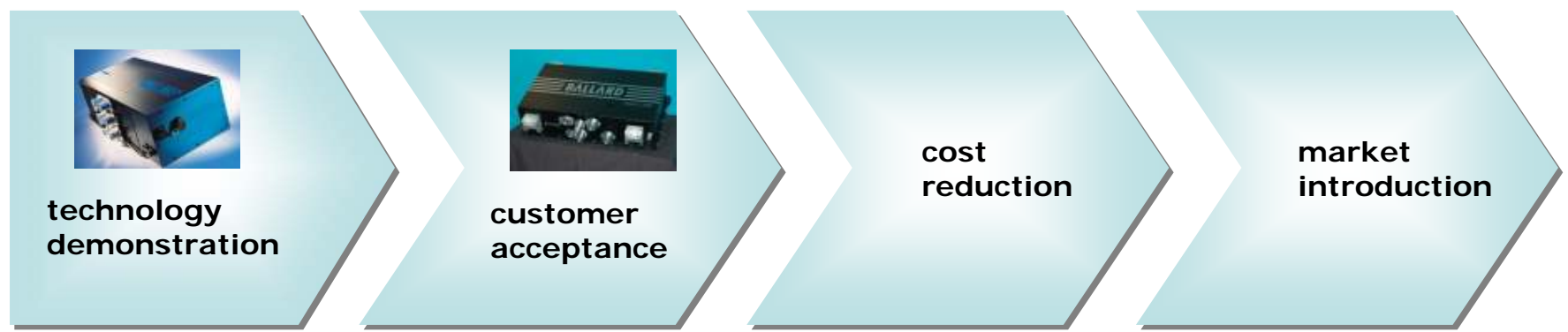
- Fuel cell car using hydrogen from renewable sources reduces 4-7 tons of CO₂ per year
- Fuel cell bus using hydrogen from renewable sources removes 70-90 tons of CO₂ per year
- Even when natural gas used to create hydrogen there is at least a 30% reduction in GHG emissions

Market Timeline



7

<i>technology development program</i>	1999-2001	2004-2007	2006-2009	TBD
<i>vehicles</i>	2005-2008	2009-2011	2012-2014	2014 onwards



Canadian / California Collaboration

BALLARD[®]
power to change the world[®]

9

- Government leadership in both Canada and California believe energy technology critical to reduce air pollution & GHG emissions
- Canadian leadership in hydrogen fuel cell technology
- California critical market & regulatory leader
- Key demonstrations and activity in each jurisdiction (ex. CaFCP, 2010 bus demonstration, Hydrogen Highways)



