



Bombardier Transportation Press Conference

Sharon Christians
**Vice President Communications
and Public Affairs**

**InnoTrans 2010 “The future of mobility”
Berlin, 22 September 2010**

BOMBARDIER



André Navarri

President and Chief Operating Officer

Josef Doppelbauer

Chief Technical Officer

Robert Kirchhof

Head of Project Management ZEFIRO China

Director Very High Speed Trains

Overview

1	Bombardier Transportation: A business overview
2	ZEFIRO at InnoTrans
3	Bombardier highlights at InnoTrans



Business Overview

André Navarri

President and Chief Operating Officer

**InnoTrans 2010 “The future of mobility”
Berlin, 22 September 2010**

BOMBARDIER

Financial highlights

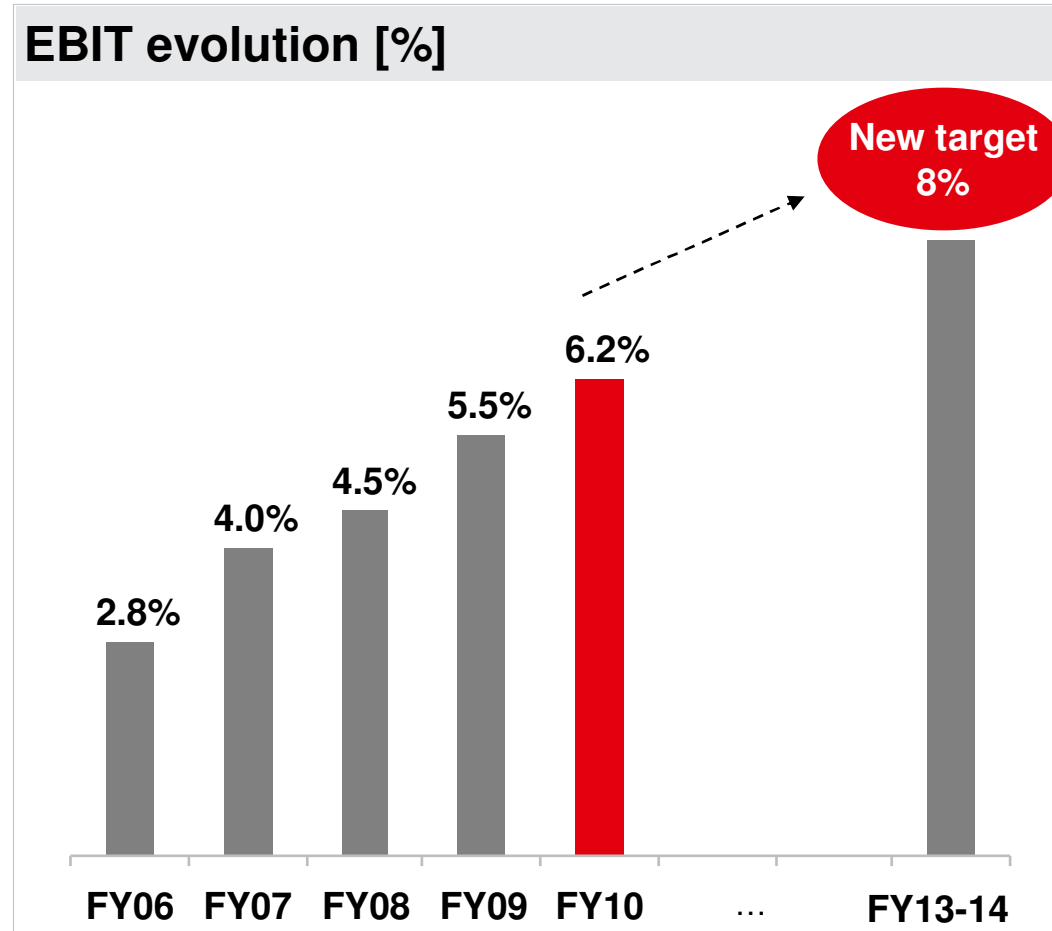
FY10 highlights

- Order intake of 9.6BUSD and book-to-bill ratio of 1.0
- Record revenues of 10.0BUSD
- EBIT of 6.2% – exceeding long-term goal of 6%

Q2 FY11 highlights

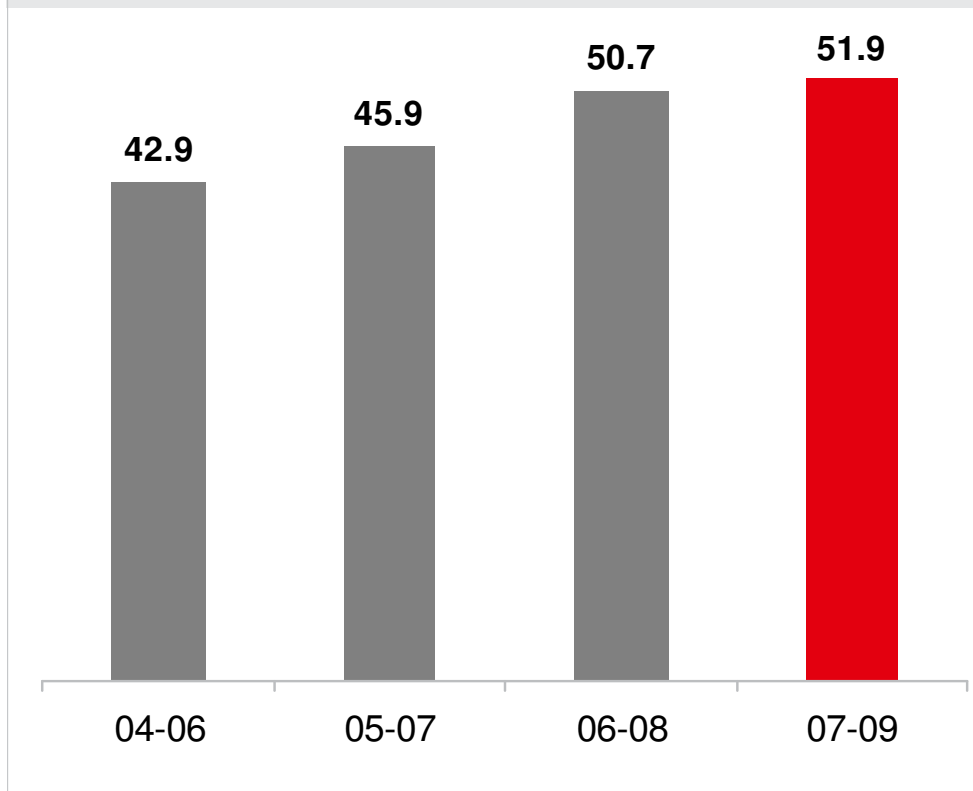
- Order intake of 4.3BUSD and book-to-bill ratio of 2.0
- Revenues of 2.1BUSD
- EBIT margin of 6.6% up from 6.2% in Q2 FY 10

Aiming higher with EBIT target



The market is stabilising – Bombardier leadership in most segments




















Annual market size¹ [BUSD]



BT market position by segment

Segment	2007-09
Urban Transit	#1
Regional/Commuter	#1
High Speed & Intercity	#3
Electric Locomotives	#1
Bogies	#1
Propulsion	#1
Services	#1
Systems	#2
Signalling	#6

Healthy order intake – major contracts won across all divisions

Project	Division	Value (MUSD) ¹
<i>Q1/FY10 – Q1/FY11 (selection)</i>		
 ZEFIRO 380 very high speed trains	Passengers	2,000
 TWINDEXX double-deck trains	Passengers	1,600
 Régio2N double-deck trains (base + option)	Passengers	1,574
 FLEXITY Toronto trams (2 orders)	North America	1,480
 ET430 commuter trains	Passengers	605
 TALENT 2 regional train call-offs	Passengers	594
 FLEXITY Berlin trams	Passengers	431
 High speed train maintenance	Services	405
 Double-deck commuter trains (MI09)	Passengers	386
 E464 electric locomotives	Locomotives & Equipment	383
 MOR high speed trains	Passengers	373
 NJT commuter rail	North America	267
 INNOVIA Phoenix automated people mover	Systems	255
 ELECTROSTAR commuter trains	Passengers	249
 INNOVIA King Abdullah Financial District monorail	Systems	241
 FLEXITY Swift Karlsruhe trams	Passengers	190
 MOVIA Shanghai metro	Passengers	138
 CONTESSA trains	Passengers	137
 Refurbishment of metros	Services	120

Market outlook and major tenders

Market outlook

- In the short to medium term, the market will be fuelled by several large contracts, already in advanced stages
- Overall, the fundamentals for rail remain positive and growth in emerging markets will continue to benefit the rail supply industry

Key projects to be awarded

<i>Project name</i>	<i>Size</i>
 DB intercity trains (ICE ^x) ¹	220 trains
 MOR HS/VHS trains	more than 300 cars
 Trenitalia VHS ²	50 trains
 Thameslink (London)	up to 1200 cars
 Israel double-deck coaches	up to 460 cars
 BART Rapid Transit	more than 700 cars
 Stockholm Metro	300 cars
 Melbourne trams	up to 150 trains
 IR ³ locomotives “Madhepura”	up to 800 twin units
 IR ³ locomotives “Dankuni”	up to 1,000 units
 Amtrak locomotives	up to 70 units
 Dublin Metro North	System
 Brisbane Gold Coast Rapid Transit	System
 London SSL ATC Equipment	Signalling

Well positioned in the fast growing markets – India

Bombardier's position in India



- More than 35 years of experience
- Leader in propulsion and signalling
- Only foreign player with an owned site producing mass transit vehicles including bogies
- Over 190 cars for Delhi metro already delivered, on time for the Commonwealth Games. Total order for 538 cars.
- Well prepared for upcoming opportunities in mass transit, mainline, freight locomotives



Well positioned in the fast growing markets – Brazil

Bombardier's position in Brazil



- Recently announced winner of a tender to build a 24 km, 378 car high-capacity monorail system in São Paulo
- Refurbishing 157 metro cars for São Paulo
- Local leader in vehicle refurbishment and modernisation
- Industrial presence ramped up in 2009, 50% in employees and 60% in manufacturing area
- Setting up to respond to local market predicted growth



© Bombardier Inc. or its subsidiaries. All rights reserved.

Well positioned in the fast growing markets – China

Bombardier's position in China



- Present in China since 1954
- Three joint ventures (JV) and six wholly foreign owned enterprises
- Three JV production facilities for rolling stock and propulsion
- Major recent contracts for (Very) High Speed trains, passenger cars, locomotives, metros, APMs, signalling, propulsion and controls
- High Speed trains in operation since 2009. Production of *ZEFIRO* 380 trains has started.



Overview

1 **Bombardier Transportation: A business overview**

2 **ZEFIRO at InnoTrans**

3 **Bombardier highlights at InnoTrans**

A blurred image of a high-speed train, likely a Bombardier ZEFIRO, moving rapidly, creating a sense of speed and motion. The train is white with a red stripe along the bottom.

Bombardier ZEFIRO Platform

Robert Kirchhof

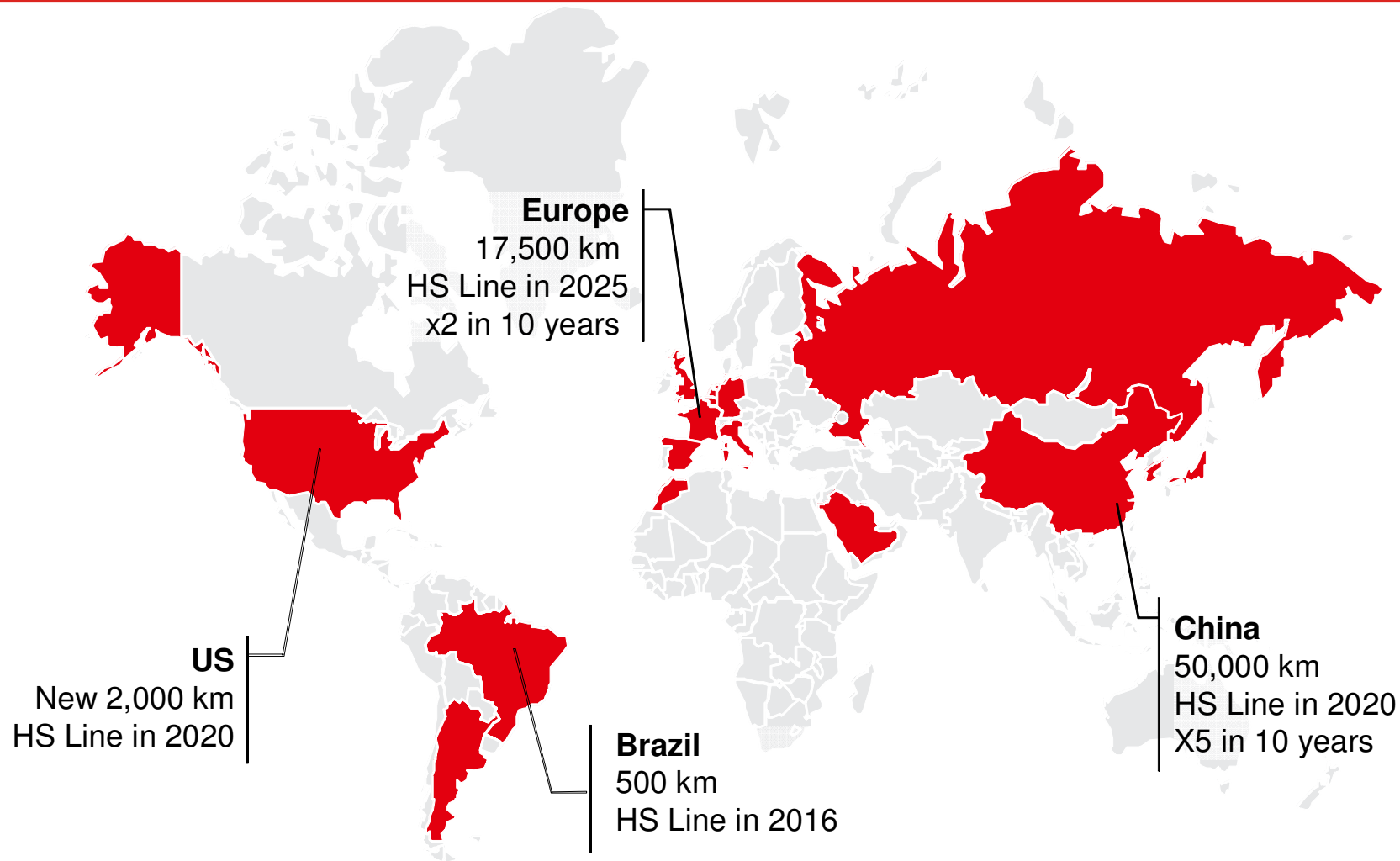
Head of Project Management ZEFIRO China

Director Very High Speed Trains

**InnoTrans 2010 “The future of mobility”
Berlin, 22 September 2010**

BOMBARDIER

High speed market worldwide expansion

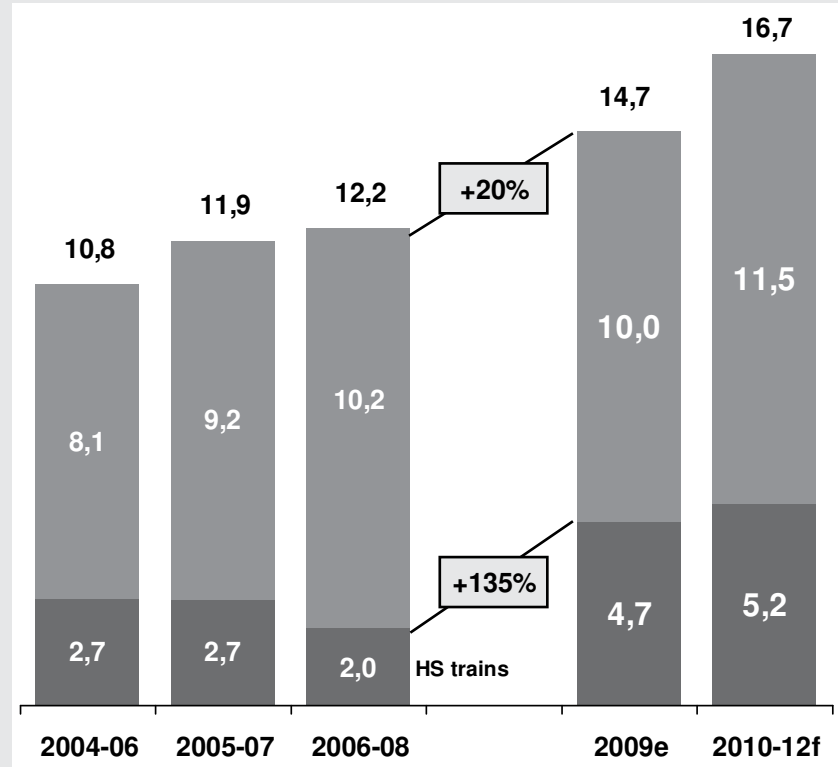


- Expansion in existing markets – 2x VHS/HS lines in Europe and 5x in China
- New markets with VHS network introduction – US, Brazil, Argentina, Russia

High speed segment will catch up after delayed growth in recent years

Market for long distance trains

Market evolution – Excl. share of local RIC suppliers



Key highlights

- HS segment is forecast to grow faster than overall market
- HS segment is doubling compared to the past 7 years average
- If share of local suppliers in RIC is included, the HS segment is even bigger

Superior experience in high speed rail



Responsible for almost 970 trains and vehicles for high speed applications worldwide

* Manufactured by Bombardier Sifang Power (Qingdao) Transportation Ltd.

ZEFIRO – A new sense of very high speed

New criteria in high speed rail

- **Yesterday, very high speed was just about speed**
- **Today, priorities have changed, it's no longer only about speed and additional criteria are gaining importance, such as:**
 - **Energy efficiency**
 - **High capacity**
 - **Smart interior designs**
 - **Flexibility**



***ZEFIRO* is specifically developed to respond to the new criteria in high speed rail definition**

ZEFIRO platform – ECO4 technologies

Energy efficiency is a top priority

Energy Management Control System

Potential energy savings on the auxiliaries

10%

EBI Drive 50 Driver Assistance System

Potential energy savings on the traction effort

Up to 14%

AeroEfficient Optimised Train Shaping

Potential energy savings on the traction effort

9%



ThermoEfficient Climatization System

Potential energy savings on the HVAC

Up to 38%

MITRAC Permanent Magnet Motor

Potential energy savings on the traction effort

2%

EnerGplan Simulation Tool

Potential energy savings on the fleet

20%

ZEFIRO – Already a success case

ZEFIRO platform

ZEFIRO 250
Up to 250 km/h

V300ZEFIRO*
300 – 360 km/h

ZEFIRO 380
Above 360 km/h

- 2007 – 250 km/h train to Ministry Of Railways, China (40 units)
- 2009 – 380 km/h train to Ministry Of Railways, China (80 units)
- 2010 – 250 km/h train to Ministry Of Railways, China (40 units)
- 2010 – 360 km/h train selected by Trenitalia, Italy (50 units)

160 trains sold since 2007 – The *ZEFIRO* family is already one of the leaders in the new generation high speed trains market

ZEFIRO first orders

Ministry of Railways (MOR) China*

One of the world's fastest and highest capacity train for commercial operation



- Orders for 80 trains (960 cars)
- 250 km/h speed
- Coach and sleeper configuration
- Up to 604 seats or 122 seats + 496 beds

- Orders for 80 trains (1,120 cars)
- 380 km/h speed
- Coach configuration with VIP, 1st and 2nd class
- Up to 1,336 seats (16-car configuration)

The next step

V300ZEFIRO selected in Italy*

High acceleration and interoperable – ready to cross borders from Italy



Service top speed	360 km/h
Capacity	600 seats on an 8 car train incl. bistro or restaurant
Train length	202 m (8 car)
Voltage	Up to 4 systems per train (25 kV AC; 15 kV AC; 3 kV DC; 1.5 kV DC)
Starting acceleration	> 0,7 m/s ²

Interior design solutions

Taking HSR travelling to a new dimension



© Bombardier Inc. or its subsidiaries. All rights reserved.

Exterior design

Setting a new standard with a strong and powerful design



© Bombardier Inc. or its subsidiaries. All rights reserved.

Addressing new markets

Identified projects in countries around the world

Projects / Country	Number of trains	Number of cars	Date
China	12 trains (380 km/h)	192 cars	2012
Italy	50 trains (360 km/h)	400 cars	2010 (Bombardier selected)
Germany	120 trains (250 km/h)	840 cars	2010 (on-going tender)
UK	30 trains (estimated)	240 cars	2011
France	35 + 65 trains (300 km/h)	280 + 520 cars	2011
Brazil	20 trains (300 km/h)	160 cars	2011
Portugal	12 trains (350 km/h)	96 cars	2011
Spain	8 + 12 trains (300 km/h)	64 + 96 cars	2012
US	145 trains (estimated)	> 1,000 cars	From 2011

- Over 300 trains could be acquired in the short term – a 7 billion euro market potential
- Bombardier high speed rail technologies poised to capture good share

Overview

1 **Bombardier Transportation: A business overview**

2 **ZEFIRO at InnoTrans**

3 **Bombardier highlights at InnoTrans**



Bombardier Highlights at InnoTrans

Josef Doppelbauer
Chief Technical Officer

InnoTrans 2010 “The future of mobility”
Berlin, 22 September 2010

BOMBARDIER

eco⁴ – Successful applications



شركة سعودي أوجيه المحدودة
SAUDI OGER LTD



**ECO4 products applied more than 120 times.
More than 1.3 billion kilometers of experience.**

eco⁴ – Customer success: FLEXX Eco bogie



FLEXX Eco bogie

- Almost 1,000 units in operation worldwide
- 25% reduction in life-cycle costs
- Low energy consumption, noise emission, maintenance costs
- Extremely track friendly bogie reducing track wear
- 30% reduction in mass



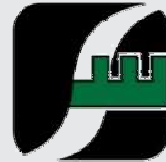
eco⁴ – Customer success: MITRAC Permanent Magnet Motor



MITRAC Permanent Magnet Motor

- Recent orders for projects in France, Saudi Arabia, Switzerland
- Higher performance than same size induction motor
- Optimised energy efficiency
- Reduced volume and weight

شركة سعودي اوجيه المحدودة
SAUDI OGER LTD



SBB CFF FFS

eco⁴ – New application: EcoSilent



EcoSilent Optimised Sound Design

- A tool for acoustic design to make trains the quietest way to travel
- Making trains quieter on the outside and on the inside
- Anticipates future requirements for noise reduction



SBB CFF FFS

ZEFIRO



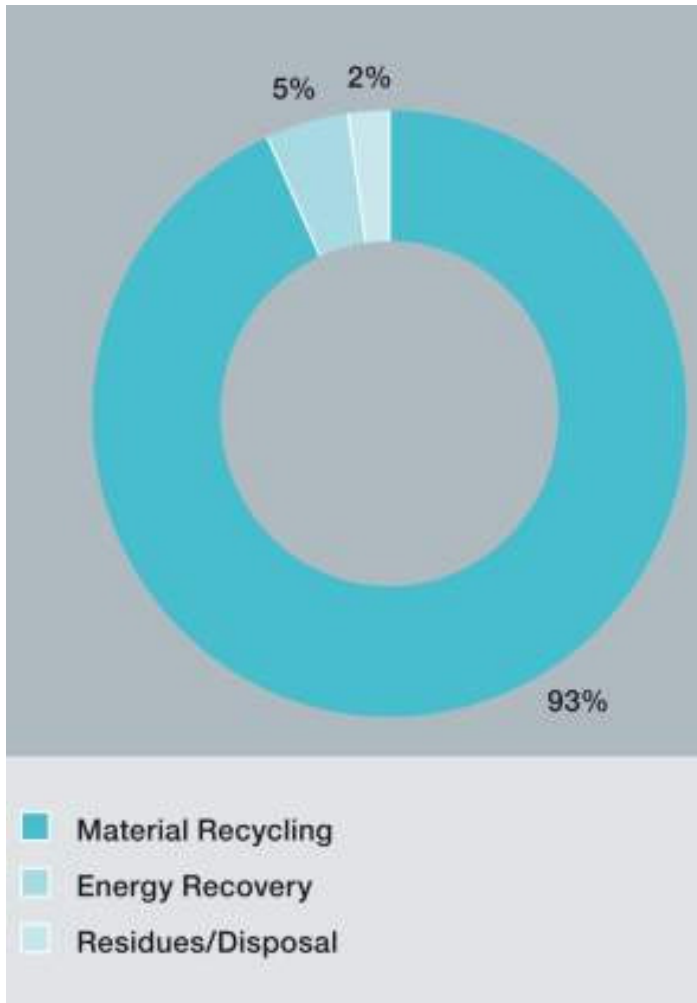


***EnerGstor* Wayside Energy Storage**

- A wayside storage based on supercapacitors for regenerated braking energy
- Stores braking energy for later use in the network
- Reduces energy losses, carbon emissions and the ongoing energy costs of transit system operation



eco⁴ – New application: EcoEfficient



EcoEfficient Optimised Environmental Performance

- A process to optimise the environmental impact of a product
- Maximises recyclability and recoverability and reduces disposal costs
- Reaches a recoverability rate of over 90%
- Summarizes performance in certified Environmental Product Declarations



Bombardier rolling stock at InnoTrans 2010: ALP-45



ALP-45 Dual Power Locomotive

- Designed for the North American market
- Seamless change between diesel and electric tracks
- Saving 40% energy and on average 20% travel time
- To be put into service by New Jersey Transit and Agence Métropolitaine de Transport, Montréal, in 2011



eco⁴

Bombardier rolling stock at InnoTrans 2010: TRAXX



TRAXX F140 DE Locomotive for Lotos Kolej

- Member of the successful *TRAXX* platform
- Covers all mainline diesel applications in continental Europe
- Used for freight in both national, as well as cross-border services



TRAXX F140 MS Locomotive for Railpool

- Based on the proven platform concept of the *TRAXX* locomotive family
- Covers all mainline freight applications in continental Europe under all four catenaries 15 and 25 kV AC, as well as 1.5 and 3 kV DC
- Homologated for freight transportation at a maximum speed of 140 km/h



Bombardier rolling stock at InnoTrans 2010: MOVIA



***MOVIA* metro for London Underground's sub-surface lines**

- 1,771 new *MOVIA* metro cars to be delivered as part of a system upgrade of London Underground
- Train Control and Management System enables predictive maintenance and therefore higher reliability
- Air conditioned passenger saloons and walk-through car connections for the first time ever on London Underground



Bombardier rolling stock at InnoTrans 2010: ITINO C.L.E.A.N.



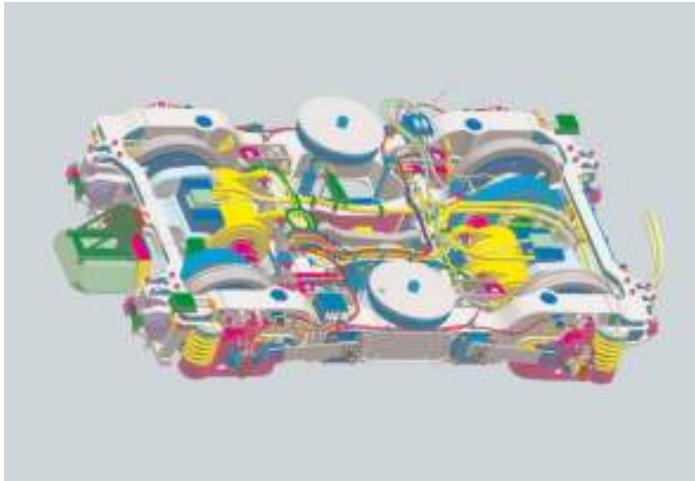
***ITINO* train with C.L.E.A.N. Diesel Power Pack for Odenwald**

- Featuring the lowest emission engine in the 500 kW class
- Up to 83% lower exhaust emissions
- Already fulfilling Stage III-B legal requirements of 2012
- High acceleration and top speed of 140 km/h



eco⁴

FLEXX Tronic WAKO system – enables smooth and cost-efficient operation of trains



Technology:

- Innovative mechatronic solution designed to compensate the natural roll movement of a carbody
- Allows for speed increase in curves of approximately. 15 %, leading to shorter journey times and higher capacities
- Network capacities are optimised without infrastructure investments

eco⁴



Implementation: *TWINDEXX* trains for *SBB*

- 59 double-deck trains for delivery from 2012 until the end of 2019
- Up to 60% higher transport capacity



PRIMOVE – contactless and catenary-free operation



Technology:

- *PRIMOVE* is based on inductive power transfer with electric supply components hidden under the vehicle and beneath the track
- Only contactless and catenary-free operation on the market
- Significantly reduced energy consumption in combination with *MITRAC* Energy Saver

eco⁴



Pilot project: city of Augsburg, Germany

- Pilot in Augsburg has just started.
- It demonstrates the technical capability of the system under conditions of daily operations

A stylized illustration of a high-speed train in motion, with a red swoosh at the bottom. The train is white with grey accents and is shown from a side-on perspective, moving towards the right. The background consists of grey diagonal lines, suggesting speed. A thick red swoosh curves along the bottom of the train, extending from the left side of the frame towards the right.

Thank you!

**Bombardier Transportation Press Conference
InnoTrans 2010 “The future of mobility”
Berlin, 22 September 2010**

BOMBARDIER