We take care of cities

Challenges and solutions

Each city faces diverse challenges

- Urbanization & population growth
- CO₂ emission and pollution
- Congestion
- Real estate value and availability

Innovative mobility solutions

- eco³ technologies
- INNOVIA 300 automated transit systems
- primoveCity e-mobility program
“The Climate is Right for Trains” ... and for e-mobility

Worldwide trends

Urbanization (Population growth)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total population [billions]</th>
<th>Rural [millions]</th>
<th>Urban [millions]</th>
</tr>
</thead>
<tbody>
<tr>
<td>1975</td>
<td>4.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2000</td>
<td>6.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2025</td>
<td>8.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2050</td>
<td>9.2</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


Climate change and pollution (CO₂ emission of transportation EU 27)

- 28.7% (360 M t)
- 70.7% (890 M t)
- 0.6% (7.8 M t)

Source: EU 27 Transport in Figures (2011)

Traffic volume (Number of people transported per hour in urban environment)

<table>
<thead>
<tr>
<th>Mode</th>
<th>1975</th>
<th>2000</th>
<th>2025</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Car</td>
<td>2,100</td>
<td>9,000</td>
<td>22,000</td>
<td>50,000</td>
</tr>
</tbody>
</table>

Source: International Association of Public Transport (UITP)

Real estate value & availability

- Hong Kong: vertical growth
- Stockholm: horizontal growth

Source: Bombardier Inc. or its subsidiaries. All rights reserved.

1 Number of people crossing a 3 to 5 metre-wide space in an hour in an urban environment

Source: International Association of Public Transport (UITP)
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ECO4
Innovative solutions in rail technology

Electric mobility has been the core business in the rail industry for over 100 years. BOMBARDIER ECO4 is a modular portfolio of innovative technologies.

ECO4 technologies

- Enable energy savings of up to 50%¹
- Regenerate energy
- Reduce CO₂ emissions
- Improve passenger comfort

¹ Compared to current products. ECO4 is a trademark of Bombardier Inc. or its subsidiaries.
ECO4
Innovative solutions

Lightweight aluminum vehicles
- Elegant design
- Reduced weight, increased recyclability
- Significantly reduced energy consumption

Aerodynamically optimized vehicle shaping
- Reduced of aerodynamic drag at maximum stability
- Reduced travel times due to higher acceleration
- Energy savings of up to 15%

Improved ride quality
- ThermoEfficient climatization systems
- ECOsilent technology reduces noise up to 50%
- Improved passenger flow

Recover energy
- Regenerative braking
- Onboard and wayside energy storage
INNOVIA 300 Automated Transit Systems
INNOVIA Monorail 300 system
Monorail systems
- Mass transit capacity (up to 48,000 pphpd\(^1\))
- Very low land use due to slender, elevated guideway structures
- No or minimal impact on existing road traffic
- Cost effective and faster construction (hence good alternative to metro)

Bus systems
- Buses are limited size vehicles, hence low capacity
- Higher capacity bus rapid transit (BRT) systems (max 30,000 pphpd\(^1\)) require large city space (15 meter dedicated lane)
- Dedicated bus lanes divide cities

\(^1\) pphpd = passengers per hour per direction
PrimoveCity
The vision of easy urban mobility becomes reality

www.primovecity.bombardier.com
Bombardier’s PrimoveCity concept

One infrastructure for all electric vehicles

Wireless inductive power transfer

For all types of vehicles (from 3 kW to 1,000 kW)

Underground - safe, invisible and tamper-proof

Zero emissions and low maintenance

➢ PrimoveCity is a game changing solution for easy urban mobility
Transportation solutions ready now for Ecocities!

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