CORPORATE SOCIAL RESPONSIBILITY AND STRATEGY IN THE AEROSPACE INDUSTRY: THE CASE OF CSeries AT BOMBARDIER

Diego Antonio Marconatto – dmarconatto@gmail.com
Universidade do Vale do Rio dos Sinos – São Leopoldo, RS, Brasil

Luciano Barin Cruz – luciano.barin-cruz@hec.ca
HEC Montréal – Montreal, Canadá

Abstract
This real-life case addresses the relationship between Corporate Social Responsibility (CSR) and competition in the setting of a global company. It focuses on how a corporation may manage its CSR policies in order to gain competitive advantage in a cutthroat market. In order to illustrate this reality, we present the strategic dilemma from the point of view of the CSR manager of Bombardier – a Canadian multinational company that manufactures aircrafts and trains – regarding the decision of whether to adopt a competitive or a collaborative approach towards the main competitors in the aerospace industry.

Keywords: CSR, shared value, competition, collaboration, multinational company

Introduction
It was seven AM on a mild summer morning in June, 2015. At the Headquarters of Bombardier in Montreal, Kent McDonald1, general manager of the Bombardier Aerospace CSR team, awaited his team for an important meeting. The day before Bombardier had announced publicly the first-ever Environmental Product Declaration (EPD) in the aerospace industry, something that would certainly change the way the aircraft industry reported and communicated the environmental impacts of its products.

The purpose of an EPD is to help stakeholders (e.g. clients, communities, regulatory agencies etc.) to understand the environmental impacts of each new aircraft released on the market. The CSeries – the new family of Bombardier aircrafts – provided a platform for the company’s release of

1 All names cited in this case study are fictitious.
the EPD. With a competitive environmental scorecard, the CSeries models – CS100 and CS300 – had been designed to enter the fast-growing 100- to 149-seat market to become an alternative source of competitiveness and profitability for Bombardier.

Before the issuance of an EPD, however, Bombardier had to develop and approve a Product Category Rule (PCR). A PCR defines what and how information is reported in the EPDs of a certain product category. The PCR is a critical tool in the development of an EPD as it enables transparency and comparability between the environmental performances of different competitors’ products. More broadly, the PCR would set a new environmental standard to be followed by Bombardier, as well as influencing other aircraft manufacturers. In the case of the CSeries, this first PCR is valid for 4 years.

To develop a PCR, Bombardier could do it alone, which would make the process faster, thus allowing the release of an EPD in tandem with the launch of the CSeries. The alternative would be to develop it in cooperation with other major players in the industry. Kent and his team were convinced that this PCR would move the whole industry together toward new environmental standards and would benefit a variety of stakeholders in the long term. Although collaboration on critical issues could create a more proactive, transparent and attractive sector in terms of environmental responsibility, stimulating innovation and growth among competitors, such collaboration among competitors could take more time and effort, as each player dealt with different technologies, expectations and goals. As time was a crucial factor for Bombardier to release an EPD together with the launch of the CSeries, Bombardier decided to launch a first PCR alone. The situation demanded special ability and sensitivity from Kent and his team. Now Bombardier is the only airplane manufacturer with this feature in the industry. Kent and his team know that competitors will try to develop something better than the CSeries in terms of environmental performance in the coming years and eventually also release EPDs based on their own PCRs. How should Kent and his team approach this matter? Is competition around environmental performance the best scenario for Bombardier? And for the whole industry? Should cooperation be encouraged for the release of an industry-led new PCR in four years? What Kent’s team should do to become a leader in a cooperation scenario?

Back on that mild day in June of 2015, Kent sees the first member of his team arriving for the meeting. He opens his notebook knowing that the EPD has critical implications for the future of the aircraft industry, with respect to both environmental impact, cooperation and/or competition.

**Bombardier and Corporate Social Responsibility (CSR)**

Founded in 1942 by a young mechanic, Bombardier has become the only company in the world to manufacture both trains and aircrafts. With more than 71,000 employees and US$16.8 billion in revenues in 2012, this global business is headquartered in Montreal, Canada (see other facts and statistics in appendix 1). Its operation is concentrated in North America and Europe, but it has sites and employees all over the world.

Bombardier claims that its role as a creator of solutions for public mobility will become increasingly important as the demand for transportation solutions intensifies in the decades to come. Current estimates project that by 2025 the world’s top 600 cities will have more than 2 billion inhabitants and account for 60% of the world’s gross domestic product. Experts also predict that by 2050, 64.1% of the developing world and 85.9% of the developed world will be urbanized. Effectively implementing transportation solutions will be critical to addressing urban sprawl and pollution, while at the same time ensuring the prosperity and productivity of these cities. Mass urbanization is just one trend affecting transportation demand2.

---

2 Other factors having an impact include: globalization and the continued increase in business and leisure travel; environmental impact (including climate change); space scarcity and congestion, especially in urban areas; the possibility
CORPORATE SOCIAL RESPONSIBILITY AND STRATEGY IN THE AEROSPACE INDUSTRY: 
THE CASE OF Cseries AT BOMBARDIER
Diego Antonio Marconatto, Luciano Barin Cruz

It has not taken long for Bombardier Aerospace to realize the necessity of fully embracing this new reality. In 2007, Bombardier became a signatory to the United Nations Global Compact (2014), the world’s largest corporate citizenship initiative supporting 10 principles in the areas of human rights, labor standards, environment and anti-corruption. Signing the United Nations Global Compact and adopting the 10 principles of social responsibility formalized the commitment of the company to be a good corporate citizen, a major milestone for the organization and a continuation of the founder’s vision. Bombardier has also subscribed to a series of other international and industrial standards, commitments and declarations, such as the Air Transport Action Group (ATAG) declaration (Aviation Industry Commitment to Action on Climate Change – see appendix 2), the General Aviation Manufacturers Association (GAMA) and International Business Aviation Council (IBAC) declaration (Business Aviation Commitment on Climate Change), the Union International des Transports Public (UITP) Charter on Sustainable Development (see appendix 3), and the International Network for Environmental Management (INEM) Charter (German Association of Environmental Management Code).

Indeed, CSR has become important to how Bombardier thinks about and conducts its business. However, whereas the company has a history of initiatives towards society and environmental stewardship, a comprehensive CSR framework had been lacking. In the mid-2010s, Bombardier started to design a CSR approach which would soon integrate the company’s competitive foundation.

“We have always understood that we cannot be profitable nor create great products if we do not operate in a way that respects our employees, our suppliers, our partners, and our environment”. (Bombardier, 2014a).

Bombardier has embedded its CSR policies in its corporate strategy in the form of three stated priorities: delivering innovation, managing responsibly and supporting communities. This three-sided mandate has coalesced into the CSR mission as stated by the company:

“As the world’s only manufacturer of both planes and trains, we provide the transportation solutions of tomorrow that drive value by addressing mobility needs, while respecting planet and people. By conducting our business in collaboration with and to the benefit of our stakeholders, we create the conditions for engaged talent, constant innovation, and eco-efficient products and services that shape The Evolution of Mobility. This is how we move forward, responsibly”. (Bombardier, 2014b)

These three priorities serve as guidelines to the development of projects in specific areas related to the company value chain. Particularly, Bombardier organizes its CSR projects and activities around six main pillars: products and services, governance, operations, supply chain, responsible citizenship, employees. Acting through these, Bombardier claims that it strives to produce shared value for both business and society. Each pillar is addressed through multiple initiatives designed to enhance the competitiveness of the company while creating meaningful value for society.
The six CSR pillars

Since the creation of the six CSR pillars, Bombardier has conceptualized the production of aircrafts and trains under a product responsibility strategy tailored to the specifics of the industry. The process starts with the design of the products, involves Bombardier’s supply chain, manufacturing and testing, product use and maintenance and finishes in the end-of-life of all vehicles. Environmental impact reduction and safety aspects of each step are considered.

The actions on governance involve risk management, the development and application of a code of ethics, and compliance with the Human Rights charter. Bombardier has designed policies for employees that are inclusive, egalitarian and sensitive to local aspects and conditions. All the recruitment, engagement and development phases of human resources are considered. For instance, Bombardier has engaged with universities and governments from around the globe to help train and develop the talents needed by their operation.

Operations have been designed to enhance the security of employees and the environmental-responsibility of Bombardier. The health, safety and environmental (HSE) policies of the company have been prepared in compliance with international standards such as EMAS, ISO 14.001 and OSHAS 18.001. Among other long-term goals, Bombardier aims to achieve zero occupational illness and carbon-neutral operations.

That its supply chain should reflect its CSR mission is also part of Bombardier’s efforts. Through its Supplier Code of Conduct, based on the principles of the United Nations Global Compact, the aerospace and transport company has outlined its expectations for suppliers with respect to legal compliance, labor, health and safety, environment, anti-corruption, ethics, and governance. They are selected, eventually spot-checked and have their performance tracked according to the same expectations (see appendix 4). In doing so, Bombardier tries to guarantee the accordance of its supply chain with local laws and international standards.

Finally, Bombardier works to meet their mandate of responsible citizenship by engaging with local communities. For example, in 2012, the company gave US$6 million to a program called “3Es”: education, environment and entrepreneurship. The 3Es strategy was created to provide shared value for local populations and businesses. By investing in education, Bombardier supports the creation of learning opportunities which are expected to strengthen communities in addition to developing a sustainable workforce for the transportation industry. Other forms of community participation have involved a formal employee volunteering program and partnering with pro-environment and society NGOs.

CSR and business opportunities

The environmental issues were the ones that, back in 2014, had the most obvious impact on its competitive context and relationships with Bombardier’s stakeholders. It is known widely that the transport sector is a major contributor of CO₂ gas emissions, one of the main factors responsible for climate change. According to EPA (United States Environmental Protection Agency, 2014) in the United States transportation accounted for 28% of all greenhouse gas emissions in 2011, which makes it the second largest contributor, after only the electricity sector. In this sense, it is no coincidence that Bombardier’s stakeholders have considered respect for the environment among its top priorities.

Around 2010, the company conducted a formal assessment with external stakeholders (customers, suppliers, industry initiatives, labor unions, non-governmental organizations, sponsorship recipients, regulators, and investors) in order to identify the most critical issues they would have to address in the future. The outcome of this consultation was the CSR materiality matrix (see Table 1). This matrix has allowed Bombardier to visualize its most pressing issues in relation to those of its stakeholders. Product eco-design, compliance with regulations (which include
pro-environment requirements), GHG and other emissions during operations, and impact on biodiversity turned out to be of highest importance to these publics.

Instead of an undesirable cost to be borne, the Canadian company foresaw in the increasing environmental demands, a business opportunity to be capitalized on. Its efforts to innovate could be applied to meeting the righteous expectations of its stakeholders concerning the protection of the planet while taking the lead in terms of environmental performance.

Kent and his team began to involve diverse internal publics and management layers in deep strategic discussions about how to transform such an opportunity into business differentiation. Many rounds of conversation, analysis and brainstorming resulted in the strategic decision to keep investing in the development of groundbreaking green technologies and products. That is why Bombardier continued to focus on creating products that address these needs while reaching new levels of environmental responsibility, through initiatives such as exploring the use of alternative fuels and working towards the long-term goal to manufacture 100% recoverable products. The idea is that after some years, Bombardier had the ability to provide alternative pro-environment options to its customers.

The CSeries family of aircrafts appeared as a hope of a new phase for the company by embodying the idea of CSR as a proactive business mechanism, a generator of shared value for business and society and a driver of innovation.

Table 1. Bombardier CSR Materiality Matrix

<table>
<thead>
<tr>
<th>Importance for Stakeholders</th>
<th>High</th>
<th>Medium</th>
<th>Low</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethical employment policies</td>
<td>Work environment, health and safety</td>
<td>Product health, safety and security</td>
<td></td>
</tr>
<tr>
<td>Ethical business practices and policies</td>
<td>Transparency and disclosure</td>
<td>Procurement practices</td>
<td></td>
</tr>
<tr>
<td>Use of conflict materials</td>
<td>Product eco-design and innovation</td>
<td>Supplier compliance with law</td>
<td></td>
</tr>
<tr>
<td>Remuneration</td>
<td>Product compliance with regulations</td>
<td>Anti-corruption measures</td>
<td></td>
</tr>
<tr>
<td>Community involvement</td>
<td>Product performance</td>
<td>Regulatory compliance</td>
<td></td>
</tr>
<tr>
<td>Complainets and grievance mechanisms in place</td>
<td>Customer relations and satisfaction</td>
<td>Suppliers’ practices</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Energy consumption during operations</td>
<td>Training, education and talent management</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Socioeconomic contribution</td>
<td>Financial performance</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Operations’ impact on neighboring communities</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other emissions during operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>GHG emissions during operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Diversity and equal opportunity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Labour – management relations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employee engagement &amp; enablement</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Water use during operations</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Impact on biodiversity</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Employment practices</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>


---

GVCasos | São Paulo | V. 6 | n. 2 | jul-dez 2016

www.fgv.br/gvcasos
The CSeries

With a growing need for rapid transportation between major cities, larger aircrafts have become a necessity. However, when seats are not filled on flights between smaller cities, profits decrease and unnecessary fuel is burned, leading to excessive amounts of carbon emissions per passenger. As risky as any other new product project, the CSeries nevertheless presented a new niche opportunity to connect smaller cities to one another.

The CSeries program was kicked off in 2008 and their planes started to fly in 2015. These models fly for short and long ranges and target the 100- to 149-seat market, which had been growing rapidly in recent years. The CSeries family of products comprises two different models: the CS100 (110-seat) and the CS300 (135-seat), both of which compete with different aircrafts from Boeing, Airbus, Embraer, Comac and ATR. Compared to the averages for their competitors’ in-production aircrafts for that year, the CSeries models provided economic and environmental advantages, as outlined in Table 2.

The combination of these characteristics gave the CSeries aircrafts a competitive scorecard which promised to allow Bombardier to set the bar higher for other aircraft manufacturers with regard to environmental requirements.

Table 2. Economic and Environmental Advantages of the CSeries Family of Aircrafts

<table>
<thead>
<tr>
<th>Economic advantages</th>
<th>Environmental advantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>▪ 20% fuel burn advantage</td>
<td>▪ 20% CO₂ emission advantage (up to 120,000 tons CO₂ emission savings per aircraft).</td>
</tr>
<tr>
<td>▪ 15% cash operating cost advantage</td>
<td>▪ 50% lower NOx* emissions relative to CAEP6** Emission Standards (Jan 2008).</td>
</tr>
<tr>
<td>▪ 25% direct maintenance cost advantage</td>
<td>▪ Aircraft exterior paint is chromate free and helps to reduce the aircraft weight.</td>
</tr>
<tr>
<td>▪ Advanced technology: Lower component cost, fewer system tasks.</td>
<td></td>
</tr>
<tr>
<td>▪ Advanced engine: Fewer parts, lower life-limited parts (LLP) costs.</td>
<td></td>
</tr>
<tr>
<td>▪ Enhanced systems monitoring: Reduced line maintenance.</td>
<td></td>
</tr>
<tr>
<td>▪ Advanced materials: Fewer fatigue and corrosion inspections.</td>
<td></td>
</tr>
<tr>
<td>▪ Well-suited for the hot temperatures and high altitude conditions found in many rapid-growth economies.</td>
<td>▪ Approximately 90% of cadmium-plated hardware eliminated.</td>
</tr>
<tr>
<td></td>
<td>▪ The aircraft is about 75% recyclable.</td>
</tr>
<tr>
<td></td>
<td>▪ Suppliers encouraged to be ISO 14.001-certified.</td>
</tr>
<tr>
<td></td>
<td>▪ Manufacturing facilities are designed and built to LEED standards.</td>
</tr>
</tbody>
</table>

(*) Mono-nitrogen oxides NO and NO₂: polluting gases; (**) Committee on Aviation Environmental Protection.
Building an Environmental Product Declaration (EPD) through a new Product Category Rule (PCR)

According to Kent, by using the CSeries as its flagship, Bombardier expected to move the aerospace industry beyond current regulations in terms of environmental performance and transparency. To do so, the company planned to issue an Environmental Product Declaration (EPD), the first-ever in this industry, by the time of the CSeries release. In general, an EPD summarizes and communicates the environmental impact of products at all lifecycle phases. Applying the ISO 14021 or 14025 standard and the guiding principles of the international EPD® system ensures standardization and transparency. These declarations also facilitate dialogue with customers by providing verified and comparable information. Bombardier has also partnered with suppliers to provide input on the lifecycle attributes captured in the EPDs such as:

- Resource (raw material) use.
- Recyclability of maintained parts and at end of life.
- Energy and fuel efficiency.
- Water consumption.
- Greenhouse gases, noise and other emissions.

In order to allow their customers and engineers to benchmark their products against those of other companies, in 1999 Bombardier transportation division released an industry-first EPD. The CSeries was the first attempt by the aerospace division to meet the company’s goals of ensuring that all Bombardier's products have EPDs.

For the sake of clarity, there are three types of EPD. Type I refers to an environmental label attesting to a specific characteristic of a product. Type II refers to an environmental self-declaration about commitments assumed by an organization. Type III requires the development of a PCR which, in turn, can be prepared by Bombardier alone or in collaboration with other partners in the same industry.

Bombardier prepared an EPD type III for the CSeries – the EPD represents the final stage in the process of communicating the environmental impacts of the product to customers (see Figure 1). The first stage involved the completion of a life-cycle analysis (LCA) to understand the full environmental implications of the aircraft throughout its lifetime. This included design, supply chain, manufacturing, operation of the aircraft, maintenance and the recyclability of the aircraft at the end of its life.

The CSeries LCA was led by Amrita Krishna, part of Kent’s team. She started to work with all CSeries suppliers in 2010 to map the environmental impact of the aircraft’s lifecycle and to find ways to minimize it. Each and every supplier had to produce reports about the manufacturing process of their corresponding pieces – from the raw materials used to the industrial waste generated, to the energy and water used in the manufacturing of each of the CSeries components.

The LCA had to be conducted according to the Product Category Rule (PCR). The PCR document had a twofold purpose: first, it had the ambition to establish how the entire industry should conduct their EPDs and LCAs; second, the standardization would allow customers and other stakeholders to make fair comparisons of the environmental impact of products.

The situation was delicate because it was the first time an EPD had been conducted in the industry and thus would have implications for the competition. The Bombardier CSeries had a competitive environmental performance record, which would be highlighted by an EPD. At the same time, Kent believed that this EPD could push the whole industry to improve its environmental standards.

In addition, at the same time that Bombardier planned to publish its PCR, the European Union (EU) Commission was looking at developing a policy that would make EPDs for products
compulsory (European Commission, 2014). This coincidence could be another factor influencing Bombardier’s competitors’ perceptions of the project.

**Figure 1. The components of the Environmental Product Declaration (EPD)**

*Product Category Rule (PCR)*

A PCR defines the rules for conducting an LCA. The PCR provides the guidelines on what information is reported from the LCA and how it is presented in the EPD.

*Environmental Product Declaration (EPD)*

An EPD summarizes and communicates the environmental impact of a product at all lifecycle phases. Applying the ISO 14021 or 14025 standard and the guiding principles of the international EPD system ensures standardization and complete transparency.

*Life-Cycle Analysis (LCA)*

An LCA informs all environmental implications of the aircraft throughout its life. It includes design, supply chain, manufacturing, operation of the aircraft, maintenance and the recyclability of the aircraft at the end of its life.

The EPD allows stakeholders to know everything they need to know on the environmental impact of an aircraft.

There are three types of EPDs.

- **EPD type I**: Environmental label attesting to a specific characteristic of a product.
- **EPD type II**: Environmental self-declaration about commitments assumed by the organization.
- **EPD type III**: Industry-level declaration (requires the development of a PCR).

**Decisive coming days…**

09:00 in the morning. The whole team is in the room and Kent can start the meeting. He drinks a last cup of coffee and starts the talk. The first PCR has set the rules for how Bombardier Aerospace reports information in its EPDs, and time was a key issue for the decision of developing it alone.

However, should Bombardier consider the next PCR as an opportunity to establish collaboration among the main players in the industry around environmental responsibility? The next four years will be decisive for the industry and Bombardier needs to decide the best positioning to adopt.
Sources:
Appendix 1

**Bombardier**

**Aerospace**

**Transportation**

---

<table>
<thead>
<tr>
<th>Revenues*:</th>
<th>16.8</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adjusted net income*:</td>
<td>0.7</td>
</tr>
<tr>
<td>Order backlog*:</td>
<td>66.6</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employees:</th>
<th>35,500</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues*:</td>
<td>8.6</td>
</tr>
<tr>
<td>Order backlog*:</td>
<td>32.9</td>
</tr>
</tbody>
</table>

**Product. and Engineer. Sites**

<table>
<thead>
<tr>
<th>Region</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>13</td>
</tr>
<tr>
<td>Europe</td>
<td>1</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>1</td>
</tr>
<tr>
<td>Rest of World</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Employees:</th>
<th>36,000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenues*:</td>
<td>8.1</td>
</tr>
<tr>
<td>Order backlog*:</td>
<td>33.7</td>
</tr>
</tbody>
</table>

**Product. and Engineer. Sites**

<table>
<thead>
<tr>
<th>Region</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>North America</td>
<td>9</td>
</tr>
<tr>
<td>Europe</td>
<td>37</td>
</tr>
<tr>
<td>Asia-Pacific</td>
<td>14</td>
</tr>
<tr>
<td>Rest of World</td>
<td>4</td>
</tr>
</tbody>
</table>

---

**Business aircraft**

- Learjet, Challenger and Global aircraft families

**Commercial aircraft**

- New CSeries program, CRJ Series and Q-Series aircraft families

**Amphibious aircraft**

- Bombardier 415 and Bombardier 415 MP aircraft

**Specialized aircraft solutions**

- Bombardier aircraft modified for special missions

**Aircraft services and training**

- Aircraft parts, maintenance, comprehensive training, technical support and publications, and online services

---

**Rail vehicles**

- Automated people movers, monorails, light rail vehicles, advanced rapid transit, metros, commuter/regional trains, intercity/high-speed trains and locomotives

**Propulsion and controls**

- Complete product portfolio for applications ranging from trolley buses to freight locomotives

**Bogies**

- Product portfolio for the entire range of rail vehicles

**Services**

- Fleet maintenance, operations and maintenance (O&M), vehicle refurbishment and modernization, and material management

**Transportation systems**

- Customized “design-build-operate-maintain” transportation system solutions

**Rail control solutions**

- Advanced signaling solutions for mass transit and mainline systems

(*) 2012; billions of dollars

Bombardier Aerospace and Transportation Businesses

Source: www.bombardier.com
Appendix 2

Aviation Industry Commitment to Action on Climate Change

As leaders of the aviation industry, we recognise our environmental responsibilities and agree on the need to:

- build on the strong track record of technological progress and innovation that has made our industry the safest and most efficient transport mode; and
- accelerate action to mitigate our environmental impact, especially in respect to climate change while preserving our driving role in the sustainable development of our global society.

Therefore, we, the undersigned aviation industry companies and organisations declare that we are committed to a pathway to carbon-neutral growth and aspire to a carbon-free future.

To this end, in line with the four-pillar strategy unanimously endorsed at the 2007 ICAO Assembly, we will:

1. push forward the development and implementation of new technologies, including cleaner fuels;
2. further optimise the fuel efficiency of our fleet and the way we fly aircraft and manage ground operations;
3. improve air routes, air traffic management and airport infrastructure; and
4. implement positive economic instruments to achieve greenhouse gas reductions wherever they are cost-effective.

We urge all governments to participate in these efforts by:

1. supporting and co-financing appropriate research and development in the pursuit of greener technological breakthroughs;
2. taking urgent measures to improve airspace design including civil/military allocation, air traffic management infrastructure and procedures for approving needed airport development; and

Our efforts and commitment to work in partnership with governments, other industries and representatives of civil society will provide meaningful benefits on tackling climate change and other environmental challenges.

We strongly encourage others to join us in this endeavour.

Appendix 3

Appendix 4

Integrating CSR into the Bombardier Procurement Processes