

# The Postal Industry: Forging a Pathway in Green Logistics

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## Foreword

This research on the postal sector is directly linked to my Plan of Study because it combines all of my components and learning objectives into one large project. Successfully completing my MRP relied heavily on the knowledge and skills gained throughout my class work in semesters 1 – 5. In addition, the practical experience gained through my two internships, the several workshops, seminars and conferences I've attended and the networking I have done in an attempt to further my knowledge and understanding of Ontario's energy landscapes proved crucial to my research and have shown the role that renewable energy and conservation can play in helping Canada realize a clean energy future.

My MRP helped me gain practical knowledge of the phases that are required in the implementation of a renewable energy project. Throughout my coursework I critically assessed and analyzed the merits and drawbacks of various energy policies, projects and programs. I developed recommendations and innovative proposals for how to disrupt current inefficient practices with the goal of divesting from fossil fuel energy, limiting greenhouse gas emissions, improving efficiencies in generation and delivery of energy and improving access to and affordability of this basic human need. With this research, I had the opportunity to conduct a comparative analysis of postal operators that incorporates all I have learned throughout the Masters program. This research can provide some concrete information on the impact that logistics operations have on climate change, the barriers to progress and the role business/government can play in disrupting network lock-ins and therefore take the necessary steps toward sustainable futures.

I came to York University to get hands on knowledge in the environmental sector and to make a difference in a city and community that I have lived in for my entire life. The courses I have taken and the knowledge I have actively pursued have armed me with the necessary tools and strategies to do this. This project enabled me to think critically about energy systems and pull my two years at York University together in a meaningful and impactful way.

## Abstract

This paper explores the extent to which the logistics sector contributes to global greenhouse gas emissions and energy consumption and the barriers to greening operations within this industry. Four case studies examined national postal operators around the world to assess their progress; Canada Post, United States Postal Service, Australia Post, and Royal Mail (U.K). Using a common template, these case studies looked specifically at greenhouse gas emissions and energy consumption in both transportation and building operations. Evaluation was based on industry standards and expectations as set out by the 2016 International Post Corporation Sustainability Report and Environmental Measurement and Monitoring System (EMMS) protocol. Conclusions were drawn based on the information provided in annual and sustainability reports and climate change policy and mitigation protocols in place for each postal operator. Although postal operators are making strides in improving transport and building operations, their reliance on fossil fuels for energy and the subsequent lock-in to internal combustion engines and the network externalities they have cultivated remain key barriers to greening this industry. Despite this, the postal sector appears to be engaged with the issues and is making improvements in greening its operations. However this engagement varies greatly and there seems to be more concern with financial viability, profit margins and reliability of service. In addition, the absence of an enforcing governing body within the logistics sector may be a why reason postal operators and private logistics firms have yet to make progress at a faster rate. Ultimately, more effort and growth is needed to transition to low-carbon operations in the global logistics industry.

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# The Postal Industry – Forging a Pathway in Green Logistics

## Part 1: Introduction

The way we move people and goods around the world has changed dramatically over the last few decades. Advancements in transport and logistics have shifted to the realm of possibility that which was previously considered unfathomable. Whether it is sending supplies to parts of the world struck by tragedy, such as the 2016 Fort McMurray Wildfire in Alberta, to transporting large scale materials and equipment for construction, such as the world’s largest solar farm – the 550 mega-Watt Topaz Solar Farm in California. Although these advanced logistics operations have become commonplace, they carry with them a growing environmental footprint, and along with it, a level of public and commercial dependence never expected before the 21<sup>st</sup> century. Fulfilling these requirements is a difficult, albeit unavoidable task, one that often relies on national postal operators and private logistics firms.

Behind our ability to transport and move things from one part of the world to another is energy. 27 and 34 per cent of total global energy use comes from the transportation and building sectors respectively.<sup>1</sup> Meaning that over half of the world’s energy consumption comes from the two sectors that the postal industry relies on most to operate. What’s more, of the world’s total GHG emissions in 2016, the OECD countries accounted for 66.6 per cent.<sup>2</sup> In the United States, electricity generation, transportation and industry cumulatively accounted for 77 per cent of national GHGs.<sup>3</sup> In Canada, the oil and gas, electricity, transport, and building sectors accounted for 73 per cent of total national emissions combined. Countries in the European Union produced 55.1 per cent of GHGs from “fuel combustion and fugitive emissions from fuels” and 23.2 per cent from transport, for a total of 78.3 per cent.<sup>4</sup> Put simply, the most developed countries in the world are generating the highest amount of emissions, which come largely from the energy production required to move people and goods. Figure 1 shows the breakdown of energy and emissions globally and in the logistics sector.

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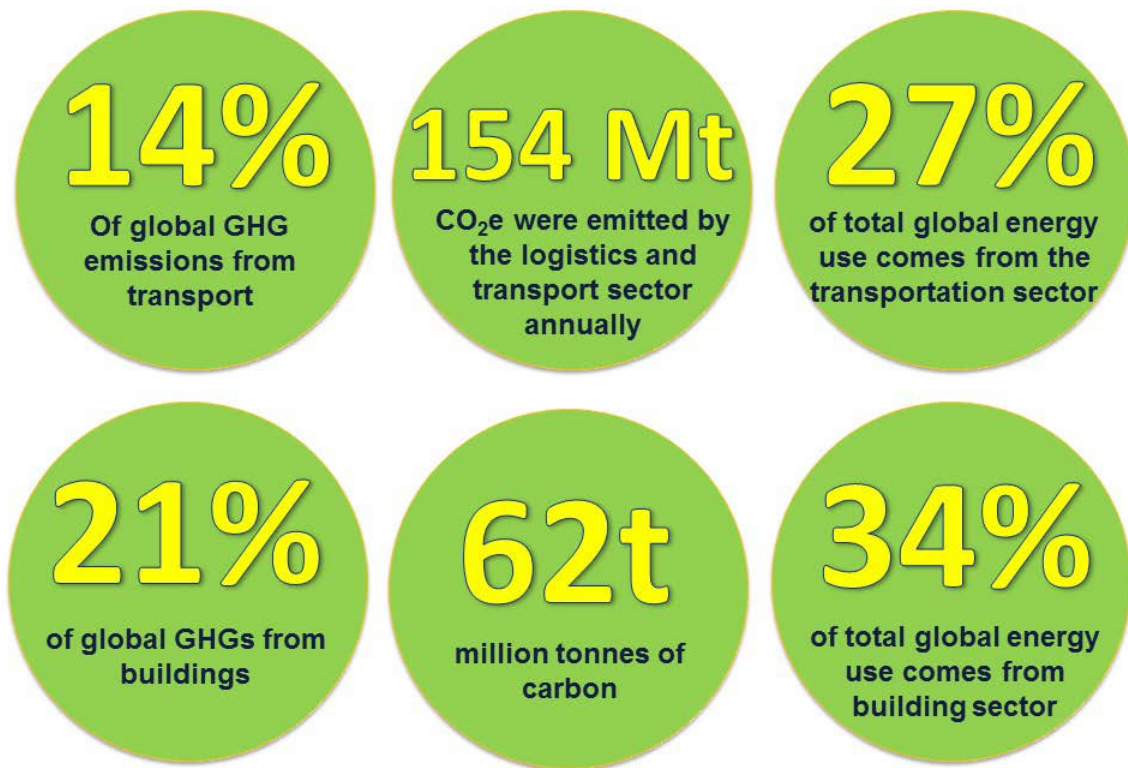
<sup>1</sup> World Energy Council. (2016). World Energy Resources. Retrieved from: <https://www.worldenergy.org/wp-content/uploads/2016/10/World-Energy-Resources-Full-report-2016.10.03.pdf>

<sup>2</sup> International Energy Agency. (2016). Key World Energy Statistics. Retrieved from: <https://www.iea.org/publications/freepublications/publication/KeyWorld2016.pdf>

<sup>3</sup> United States Environmental Protection Agency. (2017). U.S. Greenhouse Gas Inventory Report: 1990-2014. Retrieved from: <https://www.epa.gov/ghgemissions/us-greenhouse-gas-inventory-report-1990-2014>

<sup>4</sup> Eurostat. (2017). Greenhouse gas emissions, analysis by source sector, EU-28, 1990 and 2014. Retrieved from: [http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Greenhouse\\_gas\\_emissions,\\_analysis\\_by\\_source\\_sector,\\_EU-28,\\_1990\\_and\\_2014\\_\(percentage\\_of\\_total\)\\_new.png](http://ec.europa.eu/eurostat/statistics-explained/index.php/File:Greenhouse_gas_emissions,_analysis_by_source_sector,_EU-28,_1990_and_2014_(percentage_of_total)_new.png)

**Figure 1. Energy Consumption and Emissions (Globally and in the Logistics Sector)**



What is clear is the industry-wide need to change current approaches to transportation, logistics, and energy. Transportation and buildings are two of the world’s most significant sources of energy consumption and carbon emissions, which makes this topic important to explore if the world is going to take “...effective and progressive response to the urgent threat of climate change...”. Taking aggressive action to “(hold) the increase in global average temperature(s) to well below 2°C above pre-industrial levels and pursuing efforts to limit the temperature increase to 1.5°C above pre-industrial levels...”<sup>5</sup> will require the breaking down of fossil fuel pathway dependencies. With the building and transport sectors accounting for 35 per cent of global GHGs and 61 per cent of total global energy consumption – predominately from fossil fuel sources – the postal sector has a tremendous opportunity to help do this.

The postal sector operates the largest logistics and distribution network in the world and most national postal operators function under a universal service obligation (USO) in their provision of services. Crew, M. A., & Kleindorfer, P. R. (2007) defines USO as “a set of measures aiming to grant permanently all users in all points of a territory a

<sup>5</sup> United Nations. (2015). Framework Convention on Climate Change. Retrieved from: [http://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf)



sufficient level of service".<sup>6</sup> This universal service obligation means that the postal sector spans billions of kilometres globally.<sup>7</sup> Currently, 83.3 per cent of people worldwide receive mail directly to their homes on a near-daily basis<sup>8</sup>; a process that keeps the postal sector's energy consumption and carbon footprint very high. Factoring into this equation the multitude of private logistics firms such as DHL, FedEx, and UPS, global logistics service and coverage connects almost every inch of the globe. The imperfections in the postal sector along with its reach, present an extraordinary opportunity to escape the lock-in of ageing energy infrastructure, inefficient methods of transportation and the reliance on fossil fuels.

These facts express the urgent need for radical disruption. There is still enormous potential for improvement within the national postal and logistics sector.<sup>9</sup> For this reason, this paper will focus on greenhouse gas emissions and barriers to greening operations within this industry. In order to investigate the extent and reach of this sector, four case studies will be completed examining national postal operators around the world through a common template, Canada Post, United States Postal Service, Australia Post, and Royal Mail (U.K) – These case studies will explore greenhouse gas emissions and energy consumption in both transportation and building operations. Postal operators will be judged based on benchmark standards and expectations set out by the International Post Corporation<sup>10</sup> - a third-party organization that shares strategies and best practices and provides programs, targets and initiatives to assist postal operators in remaining competitive and improving their operations, including environmental sustainability and awareness. The evaluation will be based on industry standards and expectations, as set out by the 2016 International Post Corporation Sustainability Report and Environmental Measurement and Monitoring System (EMMS) protocol. Conclusions will be drawn based on the information provided in annual and sustainability reports and climate change policy and mitigation protocols in place for each postal operator.

**Part 1** introduces emissions and energy consumption data patterns in the logistics sector and provides a rationale for research in this industry. **Part 2** provides the methodology and explores how data was collected and the limitations encountered. **Part 3** provides background on the logistics industry overall, how and why examining this sector is important in order to make real progress and growth in climate change mitigation, and the associated economic implications. **Part 4** discusses current trends, changes and evolution in the logistics industry over time, what has initiated these

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<sup>6</sup> Crew, M. A., & Kleindorfer, P. R. (Eds.). (2007). *Progress toward liberalization of the postal and delivery sector* (Vol. 49). Springer Science & Business Media. – Chapter 2

<sup>7</sup> Universal Postal Union (2011, April 27). Best practices for a greener postal sector. Retrieved from: <http://www.uncclearn.org/sites/default/files/inventory/upu03.pdf>

<sup>8</sup> Universal Postal Union. (n.d). The global postal network: key figures. Retrieved from: <http://news.upu.int/insight/backgrounders/key-figures/>

<sup>9</sup> Universal Postal Union (2011, April 27). Best practices for a greener postal sector. Retrieved from: <http://www.uncclearn.org/sites/default/files/inventory/upu03.pdf>

<sup>10</sup> International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

changes and the associated environmental implications. Part 5 will provide four case studies of national postal operators around the globe (Canada Post, Royal Mail (United Kingdom), Australia Post, and United States Postal Service) to examine how the logistics sector is coping with the identified structural and organizational changes and trends in the industry. Finally, Part 6 will draw conclusions based on case study findings as postal operators compare to each other and to the standards outlined in the 2016 International Post Corporation Sustainability Report and Environmental Measurement and Monitoring System (EMMS) protocol.<sup>11</sup>

## Part 2: Methodology

### Data Sources Used

The International Post Corporation (IPC) was established in 1989 to provide evidence-based programs and initiatives and share industry strategy and best practices to assist POs in remaining competitive and improving their operations. As part of its endeavour to ensure environmental sustainability and awareness, the IPC developed the Environmental Measurement and Monitoring System (EMMS) in 2008.<sup>12</sup> EMMS participants are provided targets to reach and must make available all material data and reports for the IPC to track and evaluate. The IPC has been monitoring and reporting this data since 2009. Similarly, the Universal Postal Union (UPU) developed the Greenhouse Gas Global Overview and Mitigation Project, which calculates the postal sector's carbon footprint and encourages POs to take steps in greening postal operations. It is these quantitative and qualitative targets that will serve as the basis for evaluation of our five case studies and for which postal operator data will be compared.

### Evaluative Framework

#### **Quantitative**

National POs will be evaluated based on the following quantitative criteria of sector averages identified by the International Post Corporation and the Universal Postal Union. The case studies will use data from publicly available annual and social responsibility/sustainability reports for the most recent reporting year.

#### **Carbon Emissions:**

The IPC/UPU reports total annual emissions from program participants and records progress since.

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<sup>11</sup> International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from : <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

<sup>12</sup> International Post Corporation. (2015). Global Postal Industry Report: Key findings (November). Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

**Delivery Efficiency:**

The IPC reports the average emissions in grams CO<sub>2</sub> per letter mail item and per parcel item.

**Fuel Consumption:**

The IPC/UPU recognizes that fuel consumption is the most significant contributor to carbon emissions and therefore reports total overall fuel saved over time by program participants.

**Electricity Consumption:**

The IPC/UPU recognizes that electricity consumption is the second most significant contributor to carbon emissions and therefore reports total overall electricity consumed as well as total avoided electricity use.

***Qualitative***

National POs will be evaluated based on the following qualitative criteria outlined by the International Post Corporation and the Universal Postal Union. Individual PO climate change mitigation policies and strategies will be assessed to determine the depth of commitment each PO to embedding sustainability practices into its operations.

**Carbon Management:**

The IPC recognizes that awareness and proficiency in carbon management at all levels within the company is key to making sector-wide improvements. As such, the IPC evaluates EMMS participants qualitatively using a Carbon Management Proficiency (CMP) questionnaire that assesses 10 management pillars and quantitatively by assessing direct and indirect sources of carbon emissions. The IPC gives each PO a score out of 100.

**Types of Vehicles in Fleet:**

The UPU assesses the total number (amount), type (ex: passenger vehicle, light-duty vehicle) and fuel consumption of all vehicles in the postal fleet, both owned and/or subcontracted.

**Type of Fuel Used in Buildings:**

The UPU assesses the total number (amount) and size (total surface area) of all buildings in the postal portfolio both owned and/or leased. Total fuel purchased by fuel type and fuel used per type of building are also considered.

### **Scale of Operations:**

Number of mail pieces (parcels/packages) delivered: To gain an understanding of the scale of operations, the total number of mail pieces delivered by type (parcel, letter/transaction mail) will be identified.

## **Case Studies**

The postal operator sample was chosen for five reasons:

1. All POs operate in countries that are members of the OECD
2. All POs are members of the International Post Corporation (IPC) and the Universal Postal Union (UPU)
3. All countries (exception: Canada) are members of the IPCs Environmental Measurement Monitoring System (EMMS) and the UPU's Greenhouse Gas Global Overview and Mitigation Project (GGOM)<sup>13</sup> and can therefore provide valuable baseline values, which simultaneously show progression analysis and benchmarking and what has proven successful over the years
4. All members have national postal delivery services that have committed (either by federal requirements or company policy) to provide "universal" postal service within the country
5. Each country has a specific connection to Canada that makes them a suitable comparison
  - a. Canada's proximity to the U.S provides an easily relatable comparison
  - b. Canada and Australia share similarities in landmass, population, and amount of remote areas
  - c. Royal Mail has an advanced environmental management system that has helped shaped Canada Post standards through their relationship in the commonwealth.

## **Limitations**

Upon investigation, it was found that the evaluative framework and presentation of data by the postal operators in the four case studies suffered from significant weaknesses. This impacts the fairness of the presentation of materials and data, but due to the nature and scope of the research is beyond the capacity of the author to fully rectify. Table 1 below presents each limitation, why it is problematic and what type of measurement/approach would provide a more complete picture.

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<sup>13</sup> Universal Postal Union (2009). Greenhouse gas global overview and mitigation project: Guide for UPU member countries. Retrieved from: <http://postandparcel.info/files/2010/01/upu-greenhouse.pdf>

**Table 1: Limitations of Research Project**

Limitation	Impacts of Limitation	Alternative Approach or Measurement
<b>Qualitative</b>		
<b>EMMS participants</b>	<ol style="list-style-type: none"> <li>1. Despite the IPC working with over 45 POs over 5 continents, there are only twenty EMMS participants from which to generate “global” averages and measurements. Considering there are significantly more POs in this sector worldwide, this provides only a small sample and may not be reflective of the majority.</li> <li>2. The data provided to the IPC by EMMS participants appears to be detailed; however, the content of these details is not transparent in IPC reports and is sometimes not available in PO sustainability reports making it hard to determine where this data came from, what exactly it includes and how each individual PO has progressed over time.</li> </ol>	<ol style="list-style-type: none"> <li>1. Having a larger pool of participants would provide more accurate data.</li> <li>2. Having more detailed/structured data would provide a more accurate reflection of industry averages.</li> <li>3. Including private logistics companies such as UPS, Fedex, DHL</li> </ol>
<b>Postal Sector lacks an SIC code</b>	<p>The postal sector does not have a Standard Industry Classification (SIC) code. SIC codes are assigned to government, state agencies and private organizations by the government to ensure that all statistical data collected, analyzed and presented is done in a uniform manner for comparability purposes<sup>14</sup></p>	<p>Having an SIC code would set consistent, uniform standards across the postal industry making it easier for POs to adhere to standards and to track, measure and monitor progress equitably.</p>
<b>Consistency in Reporting</b>	<p>There is no clear standard by which all POs must report. Despite having reporting structures such as the Global Reporting Initiative (GRI), International Standards Organization (ISO), and the United Nations Global Compact, all POs report on different things, in different ways, using different measurements.</p>	<p>Having one common and consistent template and reporting structure by which all companies report would provide more consistent and comparable data.</p>
<b>Global Reporting</b>	<p>All POs in the case studies report data using GRI G4. However, there are some inherent</p>	<p>Generating and SIC code with standards may help</p>

<sup>14</sup> <http://siccode.com/en/pages/what-is-a-sic-code>

<b>Initiative structure</b>	inefficiencies in this type of reporting. POs can choose which GRI sections/strategies to report on. In order to comply, POs need to provide relevant information; however, there is no standard for how much information needs to be reported or how that information should be reported. As a result, inconsistencies occur and “complying” becomes more about ticking a box and less about actually internalizing measurements and measuring them over time.	the GRI strategies provide more detailed and strict standards for environmental reporting
<b>Carbon Management</b>	<p>The IPC’s Carbon Management and Proficiency targets have two components:</p> <ol style="list-style-type: none"> <li>1. Qualitative: evaluates PO based on a questionnaire to assess carbon management proficiency using 10 pillars</li> <li>2. Quantitative: assesses data on emissions numbers provided by the PO</li> </ol> <p>Although important, the IPC does not make available the questionnaire, the results, or how POs evaluation is completed. In addition, POs do not report their own carbon proficiency therefore this measure is difficult to fully understand and to track over time.</p>	<p>Alternative approaches might include:</p> <ol style="list-style-type: none"> <li>1. Make questions available</li> <li>2. Explicitly and transparently set out the evaluation process</li> <li>3. Set a standard whereby all POs must report on their carbon proficiency</li> </ol>

<b>Quantitative</b>		
<b>Carbon emissions</b>	<p>Reporting total carbon emissions is problematic for a few reasons:</p> <ol style="list-style-type: none"> <li>1. The EMMS aggregates all emission data from participating POs. This makes it difficult to see who has actually made progress over the years and by how much.</li> <li>2. Remote areas: Canada and Australia, for example have significantly more rural areas and employ private delivery drivers whose emissions are not always included in sustainability reports. This means that some POs around the globe have further to travel to service fewer people, which is</li> </ol>	<p>An alternative to presenting carbon emission data might be:</p> <ol style="list-style-type: none"> <li>1. GHGs per km travelled</li> <li>2. Average GHGs per vehicle/ building site</li> </ol>

	<p>a structural requirement out of the control of POs</p> <p>3. Many POs have significantly larger fleets and building portfolios than others, which logically leads to more emissions. If carbon emission data is presented (as it is in this paper) as a total overall, it is not a fair comparison.</p>	
<b>Delivery Efficiency</b>	<p>IPC reports on CO<sub>2</sub>e per parcel and per letter; however, not all POs consistently report in this manner, which makes it difficult to fairly compare progress in efficiency of processing and delivery.</p>	<p>Consistent requirement for all POs to report average grams CO<sub>2</sub>e per parcel, package and letter would help to more consistently track improvements for POs over time and to compare against benchmark values</p>
<b>Fuel Consumption</b>	<p>Fuel consumption provided by the IPC is given as an annual overall total for all EMMS participants. In addition, most POs provide fuel consumption data as total litres of fuel. Because the landmass and number of remote areas is different, so too will the number of buildings and vehicles be. This will significantly impact fuel consumption needs, which will vary considerably. As a result, directly comparing total fuel consumed is not a fair comparison.</p>	<p>POs could provide total fuel consumed by year in addition to:</p> <ol style="list-style-type: none"> <li>1. litres of fuel per square km travelled –or–</li> <li>2. GHGs per km driven</li> </ol>
<b>Electricity Consumption</b>	<p>The IPC measures electricity consumption as a total of all EMMS participants. Progress is then tracked based on the group’s ability to collectively lower this total. This is problematic as some POs may excel and others lag, but there is no clear, obvious and measurable data point for each PO to address progress and compare to other members. In addition, most POs do not actually report their total annual electricity consumption.</p>	<p>A more suitable measurement would be:</p> <ol style="list-style-type: none"> <li>1. electricity per square metre of property</li> <li>2. average electricity consumption per building</li> </ol>

Note: A comparison of the above components were recorded for each case study with as much consistency as possible. It should be noted however that not all postal operators report on the same things in the same way, nor are the same measurements used. For cases such as this, every effort was taken to accurately convert and de-aggregate values to ensure consistency in comparison. Where this occurred has been indicated within the case studies.

## Part 3: Transport & Buildings Emissions in 21<sup>st</sup> Century Logistics

In a post-COP21 report by the [Global Fuel Economy Initiative](#),<sup>15</sup> the transport sector has seen the highest growth in CO<sub>2</sub> emissions of any sector that, left unchecked, will result in further health and climate change issues. The transportation sector is responsible for around 14 per cent of global greenhouse gas (GHG) emissions.<sup>16</sup> In 2009, the World Economic Forum predicted that 154 mega-tonnes of CO<sub>2</sub>e were emitted by the logistics and transport sector annually, a statistic the [World Resources Institute](#)<sup>17</sup> claims is key to “closing the world’s emissions gap”. Meanwhile, buildings produce 21 per cent of global GHG emissions<sup>18</sup> with the [Intergovernmental Panel on Climate Change](#)<sup>19</sup> suggesting that this could double or triple by mid-century. Total global CO<sub>2</sub> emissions in 2015 reached 36.2 billion tonnes (roughly the same as 2014).<sup>20</sup> The postal sector was responsible for 62 million tonnes of this carbon (<1 per cent).<sup>21</sup>

The greenhouse gases emitted in the production of energy, including that required to fuel the transport sector, are larger (68 per cent) than any other industry in Annex I countries.<sup>22</sup> This is likely because energy generated and used to power the large majority of motor vehicles, aircraft and buildings remains overwhelmingly fossil-fuel based. Within this “energy” category, the International Energy Agency (IEA) has calculated that fossil fuel combustion dominates GHG emissions.<sup>23</sup> In 2012, the CO<sub>2</sub> generated from the production of oil and gas reached 288.1 mega tonnes.<sup>24</sup> Similarly,

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<sup>15</sup> Global Fuel Economy Initiative. (n.d). Global Fuel Economy: An update for COP22. Retrieved from: <https://www.fiafoundation.org/media/412594/gfei-cop22-update-lr-spreads.pdf>

<sup>16</sup> World Energy Council. (2016). World Energy Resources.

<sup>17</sup> Lefevre, B., and Enriquez, A. (2014). Transport Sector Key to Closing the World’s Emissions Gap. World Resources Institute. Retrieved from: <http://www.wri.org/blog/2014/09/transport-sector-key-closing-world’s-emissions-gap>

<sup>18</sup> Intergovernmental Panel on Climate Change(2015). Chapter 9 Retrieved from: [http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\\_wg3\\_ar5\\_chapter9.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter9.pdf)

<sup>19</sup> Intergovernmental Panel on Climate Change(2015). Chapter 9 Retrieved from: [http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc\\_wg3\\_ar5\\_chapter9.pdf](http://www.ipcc.ch/pdf/assessment-report/ar5/wg3/ipcc_wg3_ar5_chapter9.pdf)

<sup>20</sup> Emissions Database for Global Atmospheric Research. (2015). Trends in Global CO<sub>2</sub> emissions: 2015 Report. Retrieved from: [http://edgar.jrc.ec.europa.eu/news\\_docs/jrc-2015-trends-in-global-co2-emissions-2015-report-98184.pdf](http://edgar.jrc.ec.europa.eu/news_docs/jrc-2015-trends-in-global-co2-emissions-2015-report-98184.pdf)

<sup>21</sup> Sathaye, N., Li, Y., Horvath, A., & Madanat, S. (2006). The environmental impacts of logistics systems and options for mitigation. *UC Berkeley Center for Future Urban Transport, Institute of Transportation Studies, University of California.*

<sup>22</sup> International Energy Agency (2015). CO<sub>2</sub> Emissions from Fuel Combustion Highlights. Retrieved from: <https://www.iea.org/publications/freepublications/publication/CO2EmissionsFromFuelCombustionHighlights2015.pdf>

<sup>23</sup> International Energy Agency (2015). CO<sub>2</sub> Emissions from Fuel Combustion Highlights. Retrieved from: <https://www.iea.org/publications/freepublications/publication/CO2EmissionsFromFuelCombustionHighlights2015.pdf>

<sup>24</sup> Emissions Database for Global Atmospheric Research. (2015). Trends in Global CO<sub>2</sub> emissions: 2015 Report. Retrieved from: [http://edgar.jrc.ec.europa.eu/news\\_docs/jrc-2015-trends-in-global-co2-emissions-2015-report-98184.pdf](http://edgar.jrc.ec.europa.eu/news_docs/jrc-2015-trends-in-global-co2-emissions-2015-report-98184.pdf)



the most recent Key World Energy Statistics document (2016) indicates that more than half (59.9 per cent) of the world's primary energy supply still comes from coal and oil.<sup>25</sup> For the postal industry, these statistics highlight the considerable threat to sustainability. In 2014 carbon emissions from conventional electricity consumption in the postal sector averaged 3.09 million tonnes whereas transport and heating accounted for 3.85 million tonnes. With the exogenous changes in the logistics sector driving a restructuring of the method and frequency of transport and delivery, the need to monitor, assess and initiate sustainable change that breaks free of pathway dependencies within transport and building infrastructure will be key to progress for a low-carbon future.

Postal operators are making strides in improving transport and building operations as the ability to move goods around the globe has become more significant over the last decade. Since 2008, PO members of the International Post Corporation's Environmental Measurement and Monitoring System (EMMS) have decreased transport emissions by 12 per cent overall from baseline measurements which, translates to roughly 447 million litres of fuel savings or €327m euros.<sup>26</sup> Electricity use has also decreased in the same time period accounting for 7.5 terawatt hours or €577 million of savings since 2008.<sup>27</sup>

Despite these improvements, there is a need for continued progress and innovation in the way the world sends and receives letter/transaction mail, parcels, and packages. The reliance on fossil fuels and the subsequent lock-in to internal combustion engines and centralized energy systems, have created significant path dependencies resulting in major barriers in greening the postal industry.

What is clear is the industry-wide need to alter current approaches to transportation, logistics, and energy in order to mitigate the negative externalities that have resulted from decades of inefficient operations. The transportation of goods will continue to play a significant role in logistics and the transition from delivering parcels instead of letters will persist in influencing and effecting operations in the logistics sector. Unfortunately, left to their own devices, governments tend to act too slowly to make any meaningful change in a timely manner. According to Bob Willard, "governments have good intentions but are unable to lead – they are stripped of the needed tax revenues and are too beholden to status quo interests to be effective".<sup>28</sup> In 2013, Barrack Obama was accused of not moving fast enough to manage the dangers of climate change.<sup>29</sup> A report by the U.S auditor general stated,

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<sup>25</sup> International Energy Agency. (2016). Key World Energy Statistics. Retrieved from: <https://www.iea.org/publications/freepublications/publication/KeyWorld2016.pdf>

<sup>26</sup> International Post Corporation. (2015). Global Postal Industry Report: Key findings (November). Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<sup>27</sup> International Post Corporation. (2015). Global Postal Industry Report: Key findings (November). Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<sup>28</sup> Willard, B. (2012). *The new sustainability advantage: seven business case benefits of a triple bottom line*. New Society Publishers.

<sup>29</sup> Goldenberg, S. (2013, February 14). Obama acting too slowly on climate change risks, government audit finds. *The Guardian*. Retrieved from: <https://www.theguardian.com/environment/2013/feb/14/obama-too-slowly-climate-change>

*“In May 2011, we found no coherent strategic government-wide approach to climate change funding and that federal officials do not have a shared understanding of strategic government-wide priorities”<sup>30</sup>*

Canada’s Auditor General came to a similar conclusion. After a review in 2014, the office found that *“federal measures currently in place will have little effect on emissions by 2020”*. They went on to indicate that,

*“the government introduced regulations in the transportation and electricity generation sectors. However, regulations in the oil and gas sector – where emissions are growing the fastest – are still not in place 8 years after the government first indicated it would regulate this area.”<sup>31</sup>*

In the South Pacific, some countries fare no better. According to the Climate Council of Australia,

*“ (the) electricity sector is ageing, inefficient, unprepared and requires urgent reform”<sup>32</sup>*

With the building and transport sector accounting for 35 per cent of global GHGs and 61 per cent of total global energy consumption – predominately from fossil fuel sources – the imperfections in the postal sector along with its reach, present an extraordinary opportunity to escape the lock-in of ageing energy infrastructure, inefficient methods of transportation and reliance on fossil fuels. However, without needed regulations in the transport and energy sectors (as is the current norm in many nations) the logistics industry, by extension, lacks the required policy and incentives to enact meaningful change. The absence of an enforcing governing body within logistics means that postal operators and private logistics firms are free to lead or lag without any real pressure or consequences outside of public shaming. This reality has hindered the industries desire and the public’s expectation to make a profound change.

By investing R&D into strategies that radically disrupt the status quo and with the necessary supportive regulations, national postal operators can forge the pathway to improvements in the efficiency and operations of transportation overall, reduce national GHGs and redefine how the world moves people and goods.

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<sup>30</sup> Goldenberg, S. (2013, February 14). Obama acting too slowly on climate change risks, government audit finds. *The Guardian*. Retrieved from: <https://www.theguardian.com/environment/2013/feb/14/obama-too-slowly-climate-change>

<sup>31</sup> Office of the Auditor General of Canada. (2014). Video—Federal government is not doing enough to reduce greenhouse gas emissions and fight climate change. Retrieved from: [http://www.oag-bvg.gc.ca/internet/English/parl\\_vid\\_e\\_39869.html](http://www.oag-bvg.gc.ca/internet/English/parl_vid_e_39869.html)

<sup>32</sup> Stock, A. (2014). Australia’s Electricity Sector : Ageing, Inefficient and Unprepared. *Climate Council of Australia Limited*. Retrieved from : <http://www.climatecouncil.org.au/uploads/f9ba30356f697f238d0ae54e913b3faf.pdf>

## The Economic Importance of Sustainable Transitions in Logistics

There has been substantial progress in GHG emission and energy measurement and management in the postal sector as a result of stakeholder pressure and federal policy measures. Some POs such as Deutsche Post and Groupe La Poste are leading the way. However, many PO's are also seeing the business case behind sustainable transitions. Bob Willard, Former Vice President of IBM and author of *The Sustainability Advantage*, in a 2016 talk at York University stated that, *"for many years businesses affected the environment. Now, business is being affected by the environment"*.<sup>33</sup> Consequently, committing to the adoption of cleaner, more effective methods of distribution, embracing behaviours and technologies that enable buildings to operate more efficiently, and developing more robust energy infrastructure to support these goals will be key drivers of change in the logistics industry. Conversely, *"businesses that continue to sit on the sidelines will be badly handicapped relative to those that are now devising strategies to reduce risk and find competitive advantage in a warming, carbon-constrained world."*<sup>34</sup>

Considering the broad reach of national POs, they will be expected to play an important role in greening the logistics sector. In addition, multinational corporations (MNCs) such as DHL and FedEx as well as small-medium businesses (SMBs) such as Purolator cannot afford to turn a blind eye to the harmful consequences of their operations. POs need to determine their degree of vulnerability to climate-induced effects including access to and availability of energy as well as the reliability of infrastructures and supply chains.<sup>35</sup> Failure to do so could pose catastrophic consequences to firm viability and longevity. However, turning these threats into opportunities could yield more than just operational efficiency, they may also provide a strategic platform that creates value all along the value chain while competitively positioning early movers.<sup>36</sup>

Cap and trade policies, carbon taxes, minimum standard efficiency regulations and other policy-backed mandates are forcing logistics companies to innovate and invest groundbreaking R&D dollars into energy efficient technology in an effort to disrupt the status-quo. In a 2007 article in the *Harvard Business Review*, Porter and Reinhardt<sup>37</sup> argued that, *"business leaders need to start treating carbon emissions as costly, because they are... and companies need to assess and reduce their vulnerability to climate-related environmental and economic shocks."*

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<sup>33</sup> Willard, B. (2017, January 29). Week 4: Measuring Sustainability. [Lecture notes].

<sup>34</sup> Harvard Business Review. (2007, October). Climate Business | Business Climate. Retrieved from: [https://hbr.org/2007/10/climate-business-\\_business-climate](https://hbr.org/2007/10/climate-business-_business-climate)

<sup>35</sup> Porter, M.E. & Reinhardt, F.L. (2007, October). Grist: A Strategic Approach to Climate. Harvard Business Review. Retrieved from: [https://hbr.org/2007/10/climate-business-\\_business-climate](https://hbr.org/2007/10/climate-business-_business-climate)

<sup>36</sup> Porter, M.E. & Reinhardt, F.L. (2007, October). Grist: A Strategic Approach to Climate. Harvard Business Review. Retrieved from: [https://hbr.org/2007/10/climate-business-\\_business-climate](https://hbr.org/2007/10/climate-business-_business-climate)

<sup>37</sup> Porter, M.E. & Reinhardt, F.L. (2007, October). Grist: A Strategic Approach to Climate. Harvard Business Review. Retrieved from: [https://hbr.org/2007/10/climate-business-\\_business-climate](https://hbr.org/2007/10/climate-business-_business-climate)

These types of investments and changes in the postal sector have been proven to not only save harmful pollutants from entering the environment, but have also saved companies who comply millions of dollars and companies who innovate, millions more in avoided costs. For example, at Royal Mail, revenues of roughly £173,000 were received through rebates obtained as a result of waste oil, batteries, tires and cardboard diverted from the landfill. In addition the 'Green Parts' project, which reuses parts from decommissioned vehicles delivered a cost savings of approximately £570,000 in 2015/16.<sup>38</sup>

That is not to say that greening the transportation or building sector will magically solve our global climate change problems. As the way we move goods continues to evolve and become more significant over time, logistics companies will need to continue being creative in the services they offer and how they offer them. Michael Porter and Mark Kramer's<sup>39</sup> vision of "Creating Shared Value" emphasizes how business can be a powerful ally in "redefining productivity in the value chain" and creating a new definition for products and markets that change the way consumers look at and interact with the world. We saw this happen with Tesla Motors. They certainly were not the first electric vehicle firm and they have not had a hand in lowering the market value of renewables. What they did was give renewable energy a visible platform and in so doing made electric cars and renewable energy sexy.

Consumers are driving corporate and political decisions with their purchasing power and companies are being held under a magnifying glass as expectations to meet the triple bottom line are becoming more commonplace. Business schools, many of which have incorporated sustainability as a key component of their curriculum, are beginning to build business leaders that appreciate the economics behind natural capitalism and how eco-innovation can create a competitive advantage that provides value for all stakeholders.

The postal industry, which operates the largest distribution network, can lead the charge against changing climates. Their size and scope enables them to leverage the cost of renewables by creating economies of scale that break free from path dependencies. With help from private logistics firms, this industry can show that it really does pay to be sustainable. Companies like Tata Chemicals Magadi in Kenya<sup>40</sup> and Cemex in Mexico<sup>41</sup> are successful examples of the positive impacts corporate investments can have on local infrastructure. Their widespread brand recognition and loyalty gives them the opportunity to be ambassadors for clean technologies and energy efficiency and conservation behaviour. Similarly, their deep pockets enable them to explore diverse methods to break free of the lock-in to inferior technologies, like that of

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<sup>38</sup> Royal Mail. (2016). Corporate Responsibility Report 2015-16. Retrieved from : <http://www.royalmailgroup.com/sites/default/files/Royal%20Mail%20Corporate%20Responsibility%20Report%202015-16.pdf>

<sup>39</sup> Kramer, M. R., & Porter, M. (2011). Creating shared value. *Harvard business review*, 89(1/2), 62-77.

<sup>40</sup> Valente, M. (2015). Tata Chemicals Magadi : Confronting Poverty in Rural Africa. (Case Study No. W15033-PDF-ENG). London, Canada: Richard Ivey School of Business.

<sup>41</sup> Prahalad, C.K. (2003). CEMEX: Innovation in Housing for the Poor. (Case Study No. 1-429-149). Michigan, USA: he University of Michigan Business School.

pipelines and transmission wires. Oestreicher<sup>42</sup> described consumer choice as being determined by what the “owners of content” decide to make available. Since “content production, distribution, and the consumption pattern(s) (are) industry controlled”, corporations have the power to be the catalyst in the global transition to a low- carbon, sustainable energy future.

“Embedded sustainability efforts clearly result in a positive impact on business performance”<sup>43</sup>and disruptive innovation, which lies at the heart of most successful and market-changing business, can decrease national carbon emissions, improve out-dated infrastructure, and reduce long-term operational costs to companies, all while positively impacting the economy, mitigating negative externalities and creating a competitive positioning driven by sustainability principles. If the logistics industry is going to do its part in meeting climate change commitments, then it must take the steps necessary to encourage this.

Developing and investing in improved energy infrastructure and developing sustainable energy projects, as well as providing energy efficiency/conservation initiatives and incentives across all POs will be key strategies to lowering global GHG emissions and energy demands while simultaneously building more stable and secure economies.

According to the UNEP Emissions Gap Report 2016,<sup>44</sup> 167 countries around the world have included energy efficiency as priority action areas investing roughly US\$221 billion into this area. If these policies were scaled-up, UNEP argues, GHG emissions would be radically reduced. The business case for sustainability is clear and obvious. The question is whether or not the postal industry will capitalize on this.

## Part 4: The Evolving Postal Sector

The postal sector operates the largest logistics and distribution network in the world.<sup>45</sup> With hundreds of thousands of postal offices, distribution centres and sorting facilities and millions of vehicles, the postal sector’s coverage spans billions of kilometres.<sup>46</sup> In 2015 the postal sector delivered 7.81 billion parcels and 320 billion letter mail items.<sup>47</sup> In an effort to stay competitive and meet the diverse and changing needs of societies that are demanding faster, more frequent and transparent service, POs around the world have been forced to adapt the way they service the population.

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<sup>42</sup> Oestreicher, K.G (2012). *Disruptive Innovation and the Lock-in*: 2012 International Conference on Innovation, Management and Technology Research (ICIMTR2012). Melaka, MALAYSIA: 21-22 May 2012.

<sup>43</sup> Whelan, T., & Fink, C. (2016). The Comprehensive Business Case for Sustainability. *Harvard Business Review*, 21.

<sup>44</sup> United Nations Environmental Programme. (2016). The Emissions Gap Report 2016: A UNEP synthesis report ISBN 978-92-807-3617

<sup>45</sup> Universal Postal Union. (n.d). The global postal network: key figures. Retrieved from: <http://news.upu.int/insight/backgrounders/key-figures/>

<sup>46</sup> Universal Postal Union. (n.d). The global postal network: key figures. Retrieved from: <http://news.upu.int/insight/backgrounders/key-figures/>

<sup>47</sup> Universal Postal Union. (n.d). The global postal network: key figures. Retrieved from: <http://news.upu.int/insight/backgrounders/key-figures/>

Several organizations exist to assist the postal sector in greening their operations and mitigating carbon emissions. The Universal Postal Union for example, created in 1874, is an intergovernmental organization that was developed in collaboration with the United Nations to assist its 192 member countries to improve the quality of postal service and operations by setting rules and providing recommendations. In 2008, the UPU developed the Greenhouse Gas Global Overview and Mitigation Project (GGOM)<sup>48</sup> aimed at calculating the postal sector's carbon footprint and encouraging POs to take steps in greening postal operations.

Affiliated with UPU is PostEurop, which was formed in 1993 as a trade association representing European POs. It consists of 52 members in 49 countries with the goal of promoting "greater cooperation, sustainable growth and continuous innovation".<sup>49</sup> The CSR Circle was introduced to member countries in Europe with the aim of generating knowledge mobilization through the exchange of tried and tested best practices in the industry. Post Europ's mission is to ensure that all POs across the continent can operate optimally and fulfill their social and environmental responsibilities.<sup>50</sup>

Similarly, the International Post Corporation was developed in 1989 to provide evidence-based programs and initiatives and share industry strategy and best practices to assist POs in remaining competitive and improving their operations, including environmental sustainability and awareness. In fact, in 2008 the IPC developed the Environmental Measurement and Monitoring System (EMMS) in response to calls for the postal sector to clean up its act.<sup>51</sup> EMMS participants are provided targets to reach and must make available all material data and reports for the IPC to track and evaluate.

Several countries are members of more than one of these third-party organizations. Similarly, it is common to see overlap among organizations in reporting trends and targets. Each one however, provides some unique and innovative approaches to ensuring energy efficiency, environmental awareness and climate change mitigation in logistics operations. In addition, these organizations assist in setting industry standards and benchmarks and providing protocols to measure and monitor performance. As a result, this paper and the corresponding case studies will predominately use the data and statistics provided by these organizations as the global industry average and base case comparative.<sup>52</sup> The following section will summarize key trends within the overall logistics sector as they relate to energy consumption. More specifically, the energy used throughout all transport and building operations and the associated GHG emissions. The

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<sup>48</sup> Universal Postal Union (2009). Greenhouse gas global overview and mitigation project: Guide for UPU member countries. Retrieved from: <http://postandparcel.info/files/2010/01/upu-greenhouse.pdf>

<sup>49</sup> Post Europ. (n.d). About Us. Retrieved from: <http://www.posteurop.org/aboutus>

<sup>50</sup> Post Europ. (2016). Corporate Social Responsibility. Retrieved from: <http://www.posteurop.org/CSR-Activities>

<sup>51</sup> International Post Corporation. (2015). Global Postal Industry Report: Key findings (November). Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<sup>52</sup> Note that data and statistics provided directly by postal operators in their annual sustainability and industry reports will also be referenced; however, it is the intention of this paper to derive, with as much consistency as possible, majority of information from third party sources so as to avoid any conflict of interest.

case studies at the end of the report will explore these trends, in further detail, as they relate to specific postal operators. It is the author's intention to draw comparisons between overall global averages and individual postal operator averages. Postal operator data will be obtained using the firm's sustainability and annual reports as well as any other relevant, firm-issued, publicly available reports.

## Global Trends

The way we communicate, share knowledge and information, do business, and handle the day-to-day transactions of everyday life has changed dramatically in the last two decades. We have gone from pen pals to email chains, libraries to online catalogues, newspapers to Twitter, memorizing our teller's name at the bank to memorizing our online login details, and spending hours in a fitting room finding the perfect pair of jeans to ordering ten pairs and trying them all on in the comfort of our own home only to ship back the ones we don't like. The shift in the postal sector from delivering small letter mail pieces to larger packages and parcels to account for these changes is one of the most influential and uncontrollable trends in this sector. This reality has proven difficult for postal operators whose current system of operations is optimized for delivering letter mail. As customer needs and expectations evolve, postal operators from around the world have been forced to rethink their business operations and services.<sup>53,54</sup> According to Chocteau, V., Drake, D., Kleindorfer, P. R., Orsato, R., & Roset, A.,<sup>55</sup> "around the world the story is the same: electronic substitution, the financial crisis, changing mailing and advertising patterns, and a continuing requirement and public expectation to provide universal service" has paved the way for several emerging trends in this sector. The hard truth for the postal industry is that the nature of commerce is changing. As such, the ability to adapt and work effectively to proactively manage these trends will be key to lowering energy-related emissions and mitigating climate change issues in this sector. Four of these trends are outlined below. These trends will be the basis for discussion in the four case studies.

### Trend 1: The Internet Revolution

The UPU predicts that around 550 million kilograms of postal traffic traverses the globe annually.<sup>56</sup> Increased connectivity and growing wealth in developing countries has led to

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<sup>53</sup> International Post Corporation. (2015). Global Postal Industry Report. *Key findings*. Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<sup>54</sup> CSR Europe., & The Corporate Citizenship Company. (2001). European Postal Services and Social Responsibilities: How post offices enhance their economic, social and environmental role in society. Retrieved from: <http://corporate-citizenship.com/wp-content/uploads/post-offices.pdf>

<sup>55</sup> Chocteau, V., Drake, D., Kleindorfer, P. R., Orsato, R., & Roset, A. (2011). Sustainable fleet operations in the postal sector. INSEAD Working Paper. Retrieved from: <https://poseidon01.ssrn.com/delivery.php?ID=36311409510306902706409308701809310012704400607902403106408407100011115071027087085099050107020030120050069067125112076120107058042000066077127071001092005117086053026009007125114089104116084114112019120015029010117003029027086102101086083124098111&EXT=pdf>

<sup>56</sup> Universal Postal Union (2011, April 27). Best practices for a greener postal sector. Retrieved from: <http://www.unclearn.org/sites/default/files/inventory/upu03.pdf>

an increased volume of online commerce.<sup>57</sup> This has resulted in a large proportion of the global population regularly using the World Wide Web to perform day-to-day “paperless” transactions such as banking and correspondence. In addition, there has been a sharp rise in Business-to-Consumer (B2C) e-commerce.<sup>58</sup> Internet sales exceeded €615 billion in 2014 with North America having the highest volume of spending.<sup>59</sup> Of the 550 million kilograms of predicted postal traffic mentioned earlier, 50 per cent were parcels and 15 per cent packages.<sup>60</sup> It would follow that the remaining 35 per cent is a combination of letter and transactional mail, advertisements, newspaper/magazine subscriptions and the like. Postal operators around the globe are reporting that these volumes will continue to decline.

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“The biggest challenge that Australia Post faced this year was, again, the accelerating decline in the use of letter, as Australians continued to switch to digital alternatives”  
- Australia Post Annual Report 2016 pg.4

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“Volumes of letter, bills and statements peaked in 2006. Since then, they have declined every year as people use digital alternatives. While the annual rate of decline is in the single digits, it is relentless and ongoing”  
– Canada Post 2015 Annual Report pg. 2

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“Our industry is changing as letter volumes decline and parcels increase”  
– Royal Mail 2015/16 Corporate Responsibility Report pg.13

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“With the exception of packages, mail volume continues to decline over time while the number of addresses we deliver to steadily increases”  
– USPS Annual Report pg.52

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This trend has led to a steady decline in letter mail volume globally<sup>61</sup> and has shifted transportation requirements and forced postal providers around the world to rethink the way they service the public.

The most notable shift, as mentioned, has been the steady decline in volume of letter mail (almost 25 per cent for reporting postal operators).<sup>62</sup> In its place, parcel volume

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<sup>57</sup> International Post Corporation. (2015). Global Postal Industry Report. *Key findings*. Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<sup>58</sup> International Post Corporation. (2015). Global Postal Industry Report. *Key findings*. Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<sup>59</sup> International Post Corporation. (2015). Global Postal Industry Report. *Key findings*. Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<sup>60</sup> Universal Postal Union (2011, April 27). Best practices for a greener postal sector. Retrieved from: <http://www.unclearn.org/sites/default/files/inventory/upu03.pdf>

<sup>61</sup> International Post Corporation. (2015). Global Postal Industry Report: Key findings (November). Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)



has increased steadily (6.3 per cent average annual growth as of 2014)<sup>63</sup> with many POs worldwide pointing to increased e-commerce as the reason – a trend the postal industry refers to as e-substitution. With the introduction of online platforms for long-time B2C companies like Apple, Walmart and Best Buy as well as the launch of e-commerce sites such as Amazon and Etsy, this trend is not predicted to slow any time soon. This is problematic for a few key reasons. Some of which are summarized in Table 2.

**Table 2: Operational and Environmental Problems with e-Substitution**

<b>Potential problems with e-substitution</b>	<b>Reasons</b>
<b>Parcel Size</b>	Parcels are generally larger than letter mail meaning additional building space will be needed to store and larger vehicles will be required for delivery. The additional buildings require energy to operate and larger vehicles consume more petrol and are generally less economical than traditional Light-Duty Vehicles (LDVs). As a result, parcels have a larger carbon footprint than letter mail.
<b>Heavier parcels</b>	Parcels are heavier than letter mail and therefore require more energy to move thus increasing their carbon footprint.
<b>Packaging</b>	Parcels often require additional packaging to secure, protect and/or insulate products to be delivered. This additional packaging leads to increased energy consumption in the generation and subsequent disposal of packaging materials, not to mention the waste generated.
<b>Frequent delivery times</b>	E-commerce companies generally provide frequent delivery and return services, which means that these larger vehicles are often delivering before their cargo bed is at full capacity thereby sacrificing efficiency for convenience. In addition, increase in parcels have resulted in increased use of outsourced transportation (IPC SR p13)
<b>Lock-in of the ICE and pathway dependencies</b>	Most energy and landscape infrastructure is not yet robust enough to support alternative-fuel vehicles. The pathway dependencies that have resulted due to internal combustion engines have rendered it incredibly difficult to make the 100 per cent transition to clean-energy vehicles in the timelines needed to limit warming. As a result, parcels travelling long distances will still rely predominately on fossil fuel based vehicles thereby further strengthening the lock-in.

<sup>62</sup> International Post Corporation. (2015). Global Postal Industry Report: Key findings (November). Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<sup>63</sup> International Post Corporation. (2015). Global Postal Industry Report: Key findings (November). Retrieved from: [https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc\\_gpir2015\\_key\\_findings.pdf](https://www.ipc.be/~media/documents/public/markets/mi%20products/ipc_gpir2015_key_findings.pdf)

<b>Ageing energy infrastructure</b>	The current centralization of energy infrastructure in most regions in the world means that in many places energy transmission and distribution is inherently wasteful, inefficient and subject to network externalities that are locked into fossil fuel energy sources. This is costly for POs whose cargo bed will now be heavier.
<b>Storage facilities requirements</b>	A higher volume of parcels requires sorting and storage. This may require additional facilities. The energy required to build and operate these facilities increases the carbon footprint of the company and of each parcel. In addition, the additional sorting requirements may mean that building lights will be on for longer periods of time to accommodate additional packages.
<b>Higher volumes of advertising</b>	A continuing shift to e-commerce has meant that many companies are now pushing more heavily on catalogues, brochures, flyers and posters to advertise products and services to customers. This results in more paper, transportation requirements and waste.

## Trend 2: Growing Building Stock & Fleet Sizes

Fleet sizes and the number of postal facilities around the world are continuing to grow in an effort to accommodate higher parcel and package volumes that have resulted from the e-substitution boom. Consequently, energy requirements to support this change have increased accordingly. This is problematic for postal operators worldwide as majority are currently operating largely with ageing fleets<sup>64</sup> and building facilities that are over 40 years old<sup>65</sup> - many of which are inefficient and were designed under lower standards.

Much of this challenge derives from their dependence on existing energy systems, which are predominately centralized and fuel sources, which are largely fossil-fuel based. Figure 2 shows that in 2014 the world's primary supply of energy was oil (31.3 per cent), coal (28.6 per cent) and natural gas (21.2 per cent). This is problematic for two main reasons. Firstly, the world's stock of new automobiles (including those made available to postal operators) are still largely those with internal combustion engines that rely on fossil fuel sources to operate.<sup>66</sup>

<sup>64</sup> United States Postal Service Office of Inspector General. (2014, June 10). Delivery Vehicle Fleet Replacement. Retrieved from : <https://www.uspsoig.gov/sites/default/files/document-library-files/2015/dr-ma-14-005.pdf>

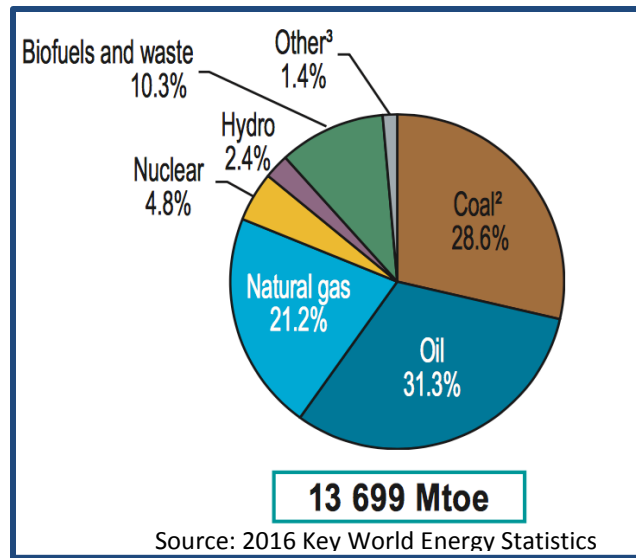
<sup>65</sup> Office of the Auditor General of Canada. (2009). Canada Post Corporation: Special Examination Report – 2009. Retrieved from: [https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport\\_en.pdf](https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport_en.pdf)

<sup>66</sup> The Guardian. (2017, March 6). The Guardian view of the car industry: an electric future Retrieved from : <https://www.theguardian.com/commentisfree/2017/mar/06/the-guardian-view-of-the-car-industry-an-electric-future>

Moreover, “95 per cent of the world’s transportation energy comes from petroleum-based fuels”.<sup>67</sup> According to the European Environment Agency<sup>68</sup>, alternative-fuel passenger cars made up only 5 per cent of the total vehicle fleet in 2015.

Although these statistics are representative of personal vehicles, they provide a reasonable proxy for commercial vehicles that will likely be used by firms in the logistics sector. For an industry that operates the largest distribution network in the world, the use of these fossil-fuel sources generates negative externalities that impact the health and wellbeing of society, the environment and the economy.

**Figure 2: Total Primary Energy Supply by Fuel Type**



The second and perhaps less recognized issue is the simultaneous dependence on existing energy infrastructure and centralized systems. Although several POs around the globe are adopting a variety of energy efficiency initiatives in buildings, including on-site energy generation and adding fuel-efficient and alternative-fuel vehicles to their fleet, the fact remains that most nations are locked in to centralized energy systems. These centralized systems transport energy sources such as oil and natural gas using pipelines and electricity using transmissions lines. Unfortunately, these systems can be costly, produce waste in distribution and transmission, and are innately inefficient over long distances.<sup>69</sup>

Disasters like Deepwater Horizon and Exxon-Valdez emphasize the dangers of these non-renewable resources and the inefficiencies of existing techniques and technologies used in extraction. Furthermore, tragedies like Lac Mégantic,<sup>70</sup> which, in transport, spilled six million litres of crude oil, causing an explosion that killed 47 people and resulted in catastrophic human, environmental and material damage<sup>71</sup> showed, once again, the risks of current distribution methods. Similarly, natural gas, often considered the “better option”, still emits harmful chemicals (sulfur, mercury, nitrogen oxide, and

<sup>67</sup> United States Environmental Protection Agency (2017 April 13). Global Greenhouse Gas Emissions Data. Retrieved from: <https://www.epa.gov/ghgemissions/global-greenhouse-gas-emissions-data>

<sup>68</sup> European Environment Agency. (Aug 12 2016). Alternative-fuel vehicles as a proportion of the total fleet. Retrieved from: <https://www.eea.europa.eu/data-and-maps/indicators/proportion-of-vehicle-fleet-meeting-4/assessment-1>

<sup>69</sup> Hales, R. (2014, April 30). Transmission Grid Loss. *The ECOreport*. Retrived from: <https://theecoreport.com/transmission-grid-loss/>

<sup>70</sup> Transportation Safety Board of Canada. (2014). Lac-Mégantic investigation summary. Retrieved from: <http://www.tsb.gc.ca/eng/rapports-reports/rail/2013/r13d0054/r13d0054-r-es.asp>

<sup>71</sup> CBCnews. (2015). Lac-Mégantic disaster by the numbers: Catalogue of a tragedy. Retrieved from: <http://www.cbc.ca/news/canada/montreal/lac-megantic-disaster-by-the-numbers-catalogue-of-a-tragedy-1.2934592>

particulates) into the air compromising air quality for local communities.

This lock-in and the subsequent path dependency that it has created is an issue that has been strengthened through years of political decisions and “*macro level forces that create(d) systematic barriers to the diffusion and adoption of (more) efficient and sustainable technologies*”.<sup>72</sup> Meaning that despite the postal industry’s awareness of their impact on the environment, their operations have become dependent on network externalities outside of their control. Unless they are generating their own energy onsite or investing in public energy infrastructure upgrades, an increase in fleet and building sizes will mean that this industry will continue to struggle to lower emissions and decrease energy use in a system that is still inefficient and persists in its fossil fuel consumption. That being said, political decisions, especially in today’s climate have increasingly favoured the transition to alternate energy landscapes, so perhaps the logistics industry is the 21<sup>st</sup> century’s newest macro level force that will tip the scales.

### *Energy Efficiency in Buildings*

According to the [International Energy Agency](#) (IEA),<sup>73</sup> 40 per cent of energy consumption in most countries comes from buildings and energy efficiency offers the most cost-effective method for reducing energy consumption. Many POs worldwide are adopting the most current technologies for all new builds such as passive, net zero or nearly net zero buildings.<sup>74</sup> However, it is the existing stock of buildings – built under previous, less efficient building codes and standards – that likely pose the largest threat to sustainability.

Nonetheless, POs globally recognize the inefficiencies of aging building stock and are adopting energy efficiency methods such as Smart Meters, which more accurately record energy usage to help manage energy consumption more effectively, time clocks, an internet-based system that reduces energy usage based on behavioural trends, and conservation initiatives that are aimed at increasing employee energy efficiency awareness.

### *Fuel Efficient Fleet Modernization*

In a report by the Global Fuel Economy Initiative (GFEI),<sup>75</sup> the transport sector has seen the largest growth in CO2 emissions among all sectors over recent decades. This growth is costly for POs, whose increase in parcels and packages require larger vehicles and more frequent service. POs around the globe are adopting more fuel-efficient vehicles, such as light-duty step trucks and hybrid electric vehicles, as well as alternative-fuel

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<sup>72</sup> Carrillo-Hermosilla, J., Del Río González, P., & Könnölä, T. (2009). *Eco-Innovation: When Sustainability and Competitiveness Shake Hands*. Palgrave Macmillan.

<sup>73</sup> International Energy Agency. (2010). *Energy Performance Certification of Buildings: A policy tool to improve energy efficiency*. Retrieved from: [https://www.iea.org/publications/freepublications/publication/buildings\\_certification.pdf](https://www.iea.org/publications/freepublications/publication/buildings_certification.pdf)

<sup>74</sup> International Post Corporation. (2016). *Postal Sector Sustainability Report 2016*. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

<sup>75</sup> Global Fuel Economy Initiative. (n.d). *Plan of Action 2012 – 2015*. Retrieved from: <https://www.iea.org/media/news/older/GlobalFuelEconomyInitiativePlanofAction20122015.pdf>

vehicles such as plug-in electric, electric tricycles and biodiesel. In addition, new GIS technology and driver training is being embraced to maximize driver efficiency – both in an effort to lower sector emissions, and minimize financial expenses. However, with the lock-in to a centralized energy infrastructure that supports the continued use of internal combustion engines, the question remains whether this transition is enough to offset the additional emissions generated as a result of growing fleet sizes.<sup>76</sup>

### Trend 3: Stakeholder Pressure & Environmental Awareness

Despite the lock-in to centralized energy systems and internal combustion engine technology, with the help of the UPU, Post Europ and the IPC, the postal sector has been making steady progress in effectively utilizing energy in its day-to-day operations while simultaneously providing reliable, transparent and responsible service. Much of this progress has been both proactive and reactive and has been driven by a variety of different stakeholders and stakeholder groups.

#### *General Public*

There is increasing stakeholder pressure calling on companies to be cleaner, greener, and more socially and environmentally responsible.<sup>77</sup> According to CSR Europe<sup>78</sup>, changing socio-economic and political environments have been huge drivers of change in Europe as demand grows for companies to operate more responsibly and be accountable for their impacts. This has meant that there is a global transition to societies that report more frequently on more issues.<sup>79</sup> For the logistics industry, it has become commonplace to release annual sustainability, social responsibility and/or annual reports describing – both qualitatively and quantitatively – all social, environmental and economic efforts. According to Deutsche Post DHL Executive Vice President of Corporate Communications and Responsibility, *“dialogue with various stakeholder groups is of particular importance. It gives companies valuable insights when setting out their business and sustainability agendas”*.<sup>80</sup> Across the globe, POs and the general public are acknowledging the severe carbon footprint of the logistics industry and the necessity to adopt more sustainable practices for both the environment and for their financial viability.

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*“The scale and scope of our operations means that Royal Mail has a large environmental footprint from its buildings and fleet.”*  
– Royal Mail Group

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<sup>76</sup> Coia, A. (2014, September 24). US trucking survey: loaded up for growth. *Automotive Logistics*. Retrieved from : <https://automotivelogistics.media/intelligence/loaded-up-for-growth>

<sup>77</sup> Europe, C. S. R. (2001). European Postal Services and Social Responsibilities. *Brussels: CSR Europe & The Corporate Citizenship Company, 48*.

<sup>78</sup> Europe, C. S. R. (2001). European Postal Services and Social Responsibilities. *Brussels: CSR Europe & The Corporate Citizenship Company, 48*.

<sup>79</sup> Ng, G. (2016, January 20). Week 2: *Sustainability Measurement & Reporting*. [Lecture notes]. Retrieved from Schulich School of Business

<sup>80</sup> Deutsche Post DHL Group. (2016). Corporate Responsibility Report 2015. Retrieved from : <http://www.dpdhl.com/content/dam/dpdhl/dpdhl/responsibility/downloads/dpdhl-corporate-responsibility-report-2015.pdf>

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*“The Environmental Measurement and Monitoring System (EMMS) programme was developed in 2008 in response to stakeholder and CEO requests for the postal sector to minimize its carbon footprint following concerns regarding the contribution of the sector to greenhouse gas emissions.”*

– International Post Corporation

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*“At Canada Post, we recognize that our environmental footprint – and the challenges we face to reduce it – are substantial. This is due to the nature of our business, and the size of the operations and fleet we must maintain to meet our mandated universal service obligation...”*

– Canada Post

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*“Because our business operations have an impact on the environment, we’re committed to understanding these impacts and finding new ways to improve”*

– Australia Post

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*Our operations and processes emit GHGs which contribute to changes in the earth’s atmosphere. As sustainability leaders, we’re pursuing ambitious goals to conserve natural resources and reduce our GHG emissions*

- United States Postal Service

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### ***Internal & External Stakeholders***

More and more postal operators are beginning to adopt strategies to improve energy efficiency and minimize operational emissions. It would seem logical then that *“a firm committed to the environment should demand a similar commitment from the firms they work with”*.<sup>81</sup> For the postal industry, this would entail responsible operations in the broader logistics supply chain (for example, energy providers and subcontracted vehicles/drivers) but also responsible operations as part of the day-to-day service for individual customers and employees (for example, driver training to improve driving efficiency, motion detector lighting in buildings, types of automobiles in fleet, types of buildings/rental properties selected for processing plants/postal offices).

Compounding these stakeholder pressures is the additional expectation that national POs promising universal service should simultaneously be leaders paving the way for less established firms to follow suit.<sup>82</sup> As a result, POs feel pressure from stakeholders at the corporate, government, non-governmental,-and public level.

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<sup>81</sup> González-Benito, J., & González-Benito, Ó. (2006). The role of stakeholder pressure and managerial values in the implementation of environmental logistics practices. *International Journal of Production Research*, 44(7), 1353-1373.

<sup>82</sup> Treasury Board of Canada Secretariat. (2005). Meeting the Expectations of Canadians. Review of the Governance Framework for Canada’s Crown Corporations (Catalogue No. BT33-4/1-2005). Retrieved from: <http://www.tbs-sct.gc.ca/report/rev-exa/gfcc-cgse-eng.pdf>

## *Stakeholder Mapping*

Because there are so many individuals and organizations that could be directly or indirectly impacted by the actions of a company or may simply perceive there to be an impact, it is important for a company to conduct stakeholder mapping. Business for Social Responsibility<sup>83</sup>, recommends identifying and prioritizing who the stakeholders are, their degree of legitimacy in terms of expertise and influence and the extent to which they are willing to engage in issues and operations that directly and indirectly impact them. Most POs in this project have done such mapping. Accordingly, the stakeholder map provided below is a subjective estimation by the author of the relevancy, legitimacy, influence and willingness to engage of stakeholders in the postal sector. Stakeholders were identified using the annual and social responsibility reports of our four showcased postal operators (Canada Post, Royal Mail, Australia Post, United States Postal Service) and the stakeholder map shown in Figure 3 was completed after assessing and cross-referencing existing, publicly-available and previously completed mapping done by national POs.

In an article entitled *“The role of stakeholder pressure and managerial values in the implementation of environmental logistics practices”*<sup>84</sup>, González-Benito, J. et al. show that a company’s actions and responses to environmental issues are often dictated by the pressures that it receives and perceives from its stakeholders. Stakeholder pressure is a trend that companies cannot afford to ignore. According to Derrick Ng<sup>85</sup>, sessional instructor at the Schulich School of Business, a manager’s role is to build relationships with stakeholders in order to create mutual value. Consumer and government demands and expectations, as we will discuss in the following two sections, can have a direct influence on brand health, reputation and financial security and can ultimately impact a postal operator’s viability.

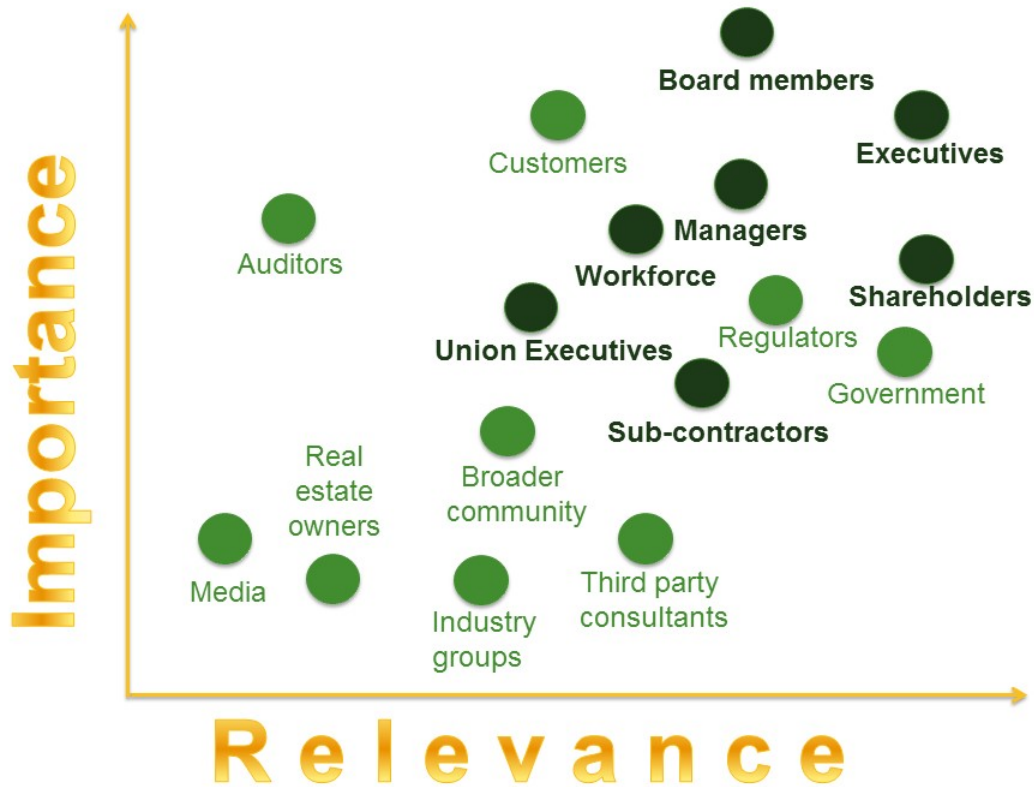
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<sup>83</sup> Morris, J., & Baddache, F. (2012). Back to basics: how to make stakeholder engagement meaningful for your company. *The Business of a Better World*.

<sup>84</sup> González-Benito, J., & González-Benito, Ó. (2006). The role of stakeholder pressure and managerial values in the implementation of environmental logistics practices. *International Journal of Production Research*, 44(7), 1353-1373.

<sup>85</sup> Ng, G. (2016, January 13). Week 1: The Case for Sustainability [PowerPoint Slides]. Retrieved from Schulich School of Business.

Figure 3. Postal Industry Stakeholder Map

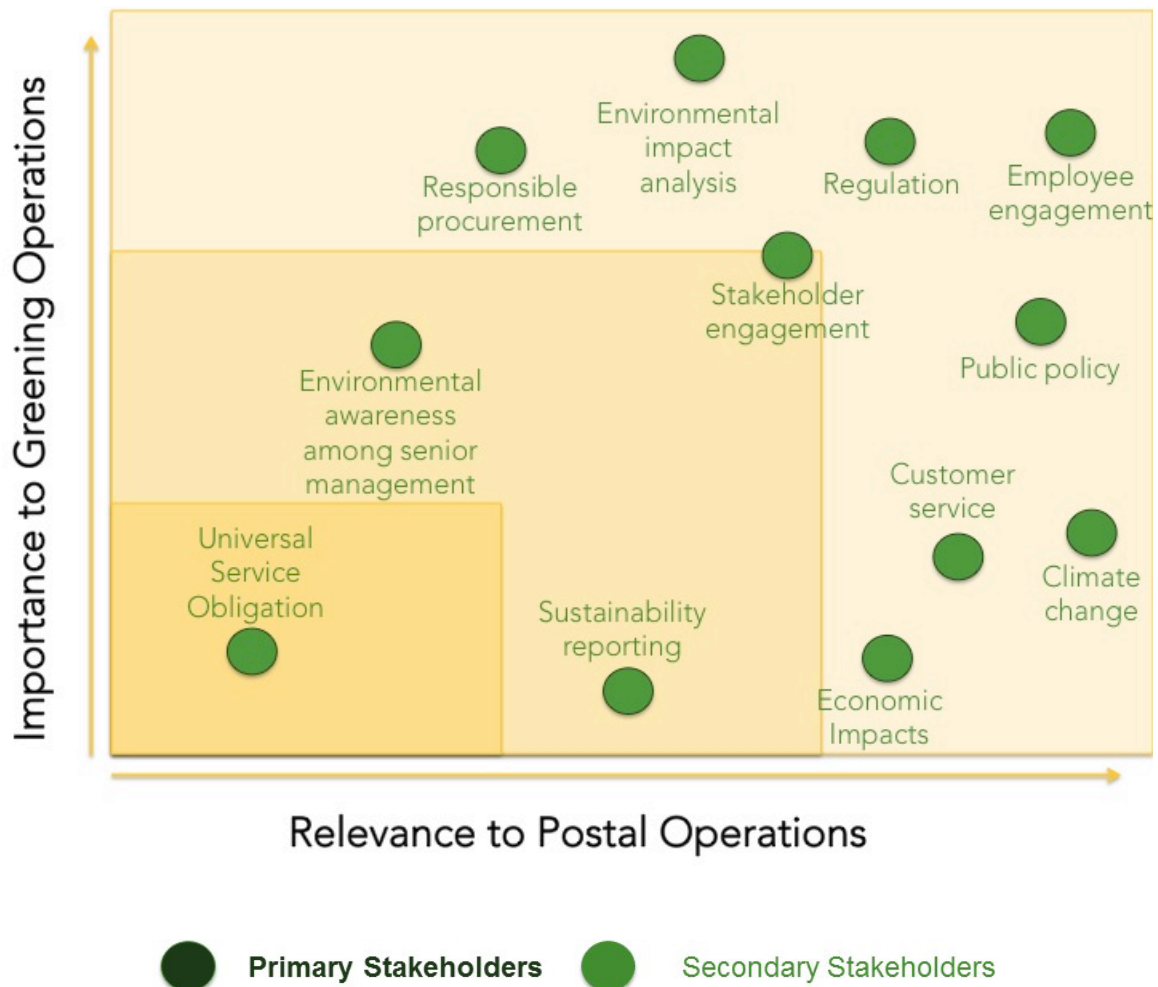


### *Materiality*

Along with stakeholder mapping is the importance of establishing the materiality of specific business operations to the long-term social, environmental and economic viability of the postal operator. Stakeholders are concerned about many things and each has their own agenda and priorities. The ability of the postal operator to determine material concerns to its business and to its stakeholders is vital to firm success. The materiality matrix in Figure 4 was thus developed by the author based on a subjective analysis of issues of materiality based on the sustainability reports of the four POs in the case study section. It should be noted however, that this paper is focused exclusively on the environmental impacts of operations and thus the below materiality matrix includes only existing and emerging environmental issues and operations that are material to the postal sector.



**Figure 4: Postal Industry Materiality Matrix**



### Trend 4: Policy, Climate Change Commitments & Compliance

In 2016, a report written by the United Nations Environmental Programme (UNEP)<sup>86</sup> indicated that almost half of all global GHG emissions derive from the building, industry and transport sectors. A year before, the 21<sup>st</sup> Conference of the Parties in Paris provided desperately needed motivation to enact several federal policy proposals aimed at reducing these numbers. As country after country ratified the Paris Agreement, regulations and initiatives began to either pop up or be revisited with newfound gusto. In an effort to help realize the commitments made by nations around the globe, government entities responsible for the transportation, climate change, building, environment, and natural resource sectors proposed policies by which the postal sector will need to comply.

<sup>86</sup> United Nations Environmental Programme. (2016). The Emissions Gap Report 2016: A UNEP synthesis report ISBN 978-92-807-3617

In terms of reducing greenhouse gases provinces, territories and states around the world have introduced carbon taxes, and cap and trade policies in order to meet climate mitigation commitments. For example, in 2017 the province of Ontario introduced the cap and trade program in collaboration with Quebec and California which, attempts to lower greenhouse gas emissions from the province’s biggest polluters in order to meet climate change goals. Revenues from the cap and trade program are then re-invested in green energy projects such as electric vehicle subsidies in the transport sector and energy efficiency and renewable energy retrofits in the residential and commercial building sector.<sup>87</sup> Cap and trade policies have seen success in many places around the world as they assist in “pricing” emissions thereby monetizing the social, environmental and economic damages caused by pollution. Although the postal sector is not considered a “major” polluter, cap and trade programs offer the ability to opt-in as a means to help companies set targets.

To lower energy consumption in buildings – currently responsible for 40 per cent of global energy use<sup>88</sup> – policy and regulation is being enacted on both new and existing buildings to set minimum standards for energy efficiency. For example, the mandatory European Union Energy Performance of Buildings Directive (European EPBD)<sup>89</sup> was updated in November of 2016 to promote smart technology and streamline current regulations. Most notable included the provision that EU countries will have to generate long-term minimum energy performance requirements and achievement plans for the renovation, retrofit or replacement of existing building stock. The IEA has stated that after-design energy efficiency upgrades are the most cost-effective method of improving energy efficiency and performance in buildings – after initial design for energy efficiency of course. For Canada Post, this seems to be the most logical solution as mail and processing plants are more than 40 years old and operate under less efficient, energy intensive standards.<sup>90</sup>

Reducing energy demand in the transportation sector – which is responsible for 27 per cent of total global energy use – has also been at the forefront of climate mitigation efforts for nations across the globe. COP21 in Paris elicited 40 new national partners with the Global Fuel Economy Initiative<sup>91</sup> – an organization working to improve vehicle efficiency around the globe. In addition, over 65 per cent of UNFCCC parties at COP21 made Intended Nationally Determined Contributions (INDCs) that prioritized mitigation

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<sup>87</sup> Government of Ontario. (2017, July 6). Cap and trade:

What you need to know about cap and trade in Ontario, including how it works and who is required to participate. Retrieved from: <https://www.ontario.ca/page/cap-and-trade>

<sup>88</sup> International Energy Agency. (2010). Energy Performance Certification of Buildings: A policy tool to improve energy efficiency. Retrieved from: [https://www.iea.org/publications/freepublications/publication/buildings\\_certification.pdf](https://www.iea.org/publications/freepublications/publication/buildings_certification.pdf)

<sup>89</sup> European Commission. (2017). Energy: Buildings. Retrieved from: <https://ec.europa.eu/energy/en/topics/energy-efficiency/buildings>

<sup>90</sup> Office of the Auditor General of Canada. (2009). Canada Post Corporation: Special Examination Report – 2009. Retrieved from: [https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport\\_en.pdf](https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport_en.pdf)

<sup>91</sup> Global Fuel Economy Initiative. (n.d). Plan of Action 2012 – 2015. Retrieved from: <https://www.iea.org/media/news/older/GlobalFuelEconomyInitiativePlanofAction20122015.pdf>

in transport, a sector the World Bank argues is the key to reducing the emissions trajectory.<sup>92</sup> According to this organization,

*“investments in low-carbon solutions are urgently needed to increase the sustainability of existing and new transport systems. The most significant opportunities to shift policies and investments are in the design of public transport systems, vehicle efficiency, demand management, regional development, and land use.”* – World Bank<sup>93</sup>

Successful policy implementation and the associated positive results often lead to increased government, public and industry awareness of the benefits of energy efficiency in operations while simultaneously providing positive case studies for adoption in other regions and geographic locations.<sup>94</sup> However, non-state actors such as national and multinational corporations and community based and non-governmental organizations have continued to rally around causes by implementing initiatives and taking action to combat issues related to climate change. The reality of the situation, according to Porter & Reinhardt<sup>95</sup> is that *“greenhouse gas emissions will be increasingly scrutinized, regulated, and priced. While individual managers can disagree about how immediate and significant the impact of climate change will be, companies need to take action now.”*

For the postal sector, organizations such as the Universal Postal Union, International Post Corporation, PostEurop, and Asian-Pacific Postal Union are bodies that assist national postal operators in operating in a more efficient and sustainable manner by helping these POs contribute to achieving national energy and emissions mitigation targets in the building and transportation sector.

The actions of non-state actors like select POs (ex: Deutsche Post DHL Group, Royal Mail Group) have played a fundamental role in bringing issues of climate change to the forefront of the global conversation.<sup>96</sup> In the last year alone, we have seen the postal and logistics sector continue to acknowledge the impact their operations have on the environment and embrace initiatives and technologies and fund innovative R&D to help reduce this impact and move beyond compliance to next practices in the postal sector. These companies are beginning to see the business case for sustainability, as we will discuss in the next section.

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<sup>92</sup> The World Bank. (2015, November 30). Transport at COP21: Part of the Climate Change Solution. Retrieved from: <http://www.worldbank.org/en/topic/transport/brief/connections-note-28>

<sup>93</sup> The World Bank. (2015, November 30). Transport at COP21: Part of the Climate Change Solution. Retrieved from: <http://www.worldbank.org/en/topic/transport/brief/connections-note-28>

<sup>94</sup> International Energy Agency. (2010). Energy Performance Certification of Buildings: A policy tool to improve energy efficiency. Retrieved from: [https://www.iea.org/publications/freepublications/publication/buildings\\_certification.pdf](https://www.iea.org/publications/freepublications/publication/buildings_certification.pdf)

<sup>95</sup> Porter, M.E. & Reinhardt, F.L. (2007, October). Grist: A Strategic Approach to Climate. Harvard Business Review. Retrieved from: [https://hbr.org/2007/10/climate-business-\\_business-climate](https://hbr.org/2007/10/climate-business-_business-climate)

<sup>96</sup> United Nations Environmental Programme. (2016). The Emissions Gap Report 2016: A UNEP synthesis report ISBN 978-92-807-3617

According to the World Energy Council<sup>97</sup>, “*policies are the main determinant of how well countries perform on the Index*”. The Emissions Gap Report found that a small number of the policies implemented in the transport and building sectors have yielded great success. More specifically, in the transportation sector vehicle fuel efficiency standards and sustainable logistics and freight transportation have yielded positive results in reducing GHGs. In the building sector, implementing energy codes, high energy efficiency in buildings and requiring energy performance certification have also led to significant decreases in GHGs.

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<sup>97</sup> MacNaughton, J. (2016 June 13). After COP21: Designing sustainable energy policies. World Energy Council. Retrieved from: [http://www.gla.ac.uk/media/media\\_464437\\_en.pdf](http://www.gla.ac.uk/media/media_464437_en.pdf)

## Part 5. Case Study Analysis

### Royal Mail

#### Company Vision

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*“Royal Mail’s vision is to be recognized as the best delivery company in the UK and across Europe. Against a backdrop of ongoing, profound change in the delivery and logistics industry, our focus remains on delivering that vision in a responsible and sustainable way. Our corporate responsibility (CR) priorities are aligned to our business strategy and to the delivery of sustainable value for our shareholders. We need to continue to be mindful of the environment. We will not succeed, and would not wish to operate, without the continued support and engagement of our customers, our people, our communities and our suppliers.”*

Moya Greene, CEO

#### Environmental Strategy

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*“We believe that the responsible management of natural resources is a commercial and environmental imperative. We are committed to protecting the natural and built environment and we aim to minimise our use of resources and save money. We do this by seeking continuous improvement through operational efficiencies in property and logistics. Good environmental management supports our aim to be a responsible and more cost efficient and competitive business.”*

- Corporate Social Responsibility Report (pg.60)

### Royal Mail Company Summary

Royal Mail was formed in 1516 and is the United Kingdom’s first and only designated national postal operator. Together with Parcelforce Worldwide and General Logistics Systems (GLS), these three businesses form Royal Mail Group Limited (RMG) to provide universal service to 29 million residential addresses and 1.4 million businesses across the U.K six days per week.

Historically a government-owned postal operator, Royal Mail became private on October 15<sup>th</sup>, 2013.<sup>98</sup>



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<sup>98</sup> Royal Mail Group. (2017). Heritage Timeline. Retrieved from: [http://www.royalmailheritage.com/accessible.html#t\\_2000](http://www.royalmailheritage.com/accessible.html#t_2000)

## Governance

RMG is governed by a Board of appointed Non-Executive Directors, the Group's Chief Executive Officer and Chief Financial Officer and the appointed Chairperson. The board is responsible for the strategic vision of the Royal Mail Group. Answering to this Board is the Chief Executive's Committee, Nomination Committee, Audit and Risk Committee, Remunerations Committee and Pensions Committee.<sup>99</sup>

This case study explores, using an environmental lens, how RMG is performing in terms of energy consumption and GHG emissions on three of the four trends: Internet Revolution, Growing Building & Fleet Sizes, and Stakeholder Pressure & Environmental Awareness. Environmental Impact Awareness, and Policy, Climate Change Commitments & Compliance will be collectively addressed in the concluding section. Unless otherwise indicated, all information and data within this case study was obtained from the 2015/16 [Corporate Responsibility Report](#) and the 2015/16 [Annual Report and Financial Statements](#).

## Company Performance by the Numbers

### Trend 1: The Internet Revolution

E-substitution and a rise in e-commerce have impacted the way Royal Mail Group conducts business. As of 2014, 84 per cent of British households had access to the internet. On a global scale, Britain has the highest percentage (16 per cent) of retail sales coming from this platform.<sup>100</sup> E-retail in the UK non-financial sector reached £533 billion in 2015 and is expected to continue growing.<sup>101</sup>

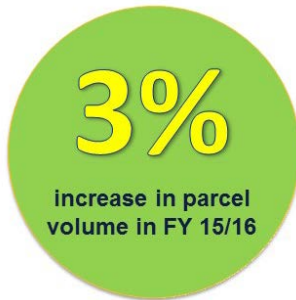
For Royal Mail Group, this has meant that the FY2015/16 resulted in 96 million parcels being handled by Parcelforce Worldwide, 431 million by GLS and 1 billion by Royal Mail for a total of 1.5 billion parcels. The Group predicts that both online purchases and returns will continue to rise and as a result of bulkier, heavier parcels that take up more cargo space than letters, so too will vehicle fuel consumption.



<sup>99</sup> Royal Mail Group. (2017). Royal Mail plc Board. Retrieved from : <http://www.royalmailgroup.com/about-us/management-and-committees/royal-mail-plc-board>

<sup>100</sup> The Economist. (2016, November 19). All that is solid melts into air. Retrieved from: <http://www.economist.com/news/britain/21710271-britons-do-more-their-shopping-online-almost-anyone-else-move-cyberspace>

<sup>101</sup> Government of the United Kingdom. (2016, November 30). Office for National Statistics. E-commerce and ICT activity: 2015: The value of e-commerce sales and the level of use by UK businesses of information and communication technologies. Retrieved from: <https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/ecommerceandictactivity/2015>



RMG has indicated that despite emissions decreasing by 2.7 per cent from the FY2014/15, meeting low emissions targets continues to be a challenge as a result of increasing parcel volumes and the time required to overhaul their ageing delivery fleet.

On the other hand, letter mail volumes dropped 3 per cent from FY2014/15 and like most other post operators, this trend is expected to continue. RMG anticipates a decline of 4-6 percent in the medium-term.



### *How Royal Mail Group Limited is responding to this trend through an environmental lens*

- ✚ RMG has introduced more double deck trailers to increase cargo capacity
- ✚ RMG has provided driver training for > 4,000 drivers in order to improve fuel efficiency

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*“The once-ailing Royal Mail, which delivers most of Britain’s post, has been saved largely by its parcel business.”*

The Economist<sup>102</sup>

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### **Trend 2: Growing Building & Fleet Sizes**

RMG is the UK’s leading parcel carrier and operates one of the largest parcel markets in Europe. As a result, fleet sizes are increasing to accommodate growing parcel/package volumes and building stock is expanding to both store and process this volume increase. The e-retail boom has resulted in an increase in warehouses, which now cover 40 million square metres of the country.<sup>103</sup> Similarly, British roads are now packed with delivery vans attempting to meet service requirements. The number of miles travelled by delivery vans increased by 4 per cent in 2015 despite overall traffic only increasing 1 per cent.<sup>104</sup>

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<sup>102</sup> The Economist. (2016, November 19). All that is solid melts into air. Retrieved from: <http://www.economist.com/news/britain/21710271-britons-do-more-their-shopping-online-almost-anyone-else-move-cyberspace>

<sup>103</sup> The Economist. (2016, November 19). All that is solid melts into air. Retrieved from: <http://www.economist.com/news/britain/21710271-britons-do-more-their-shopping-online-almost-anyone-else-move-cyberspace>

<sup>104</sup> The Economist. (2016, November 19). All that is solid melts into air. Retrieved from: <http://www.economist.com/news/britain/21710271-britons-do-more-their-shopping-online-almost-anyone-else-move-cyberspace>

In FY2015/16 RMG's fleet consisted of 47,000 vehicles that produced 66 per cent of total emissions. Building stock totalled 1,949 sites and was responsible for 32 per cent of emissions. Together, building and fleet operations generated 726,000 tonnes CO<sub>2</sub>e.

*How Royal Mail Group Limited is responding to this trend through an environmental lens*

- RMG has an Environmental Strategy focused on energy, waste, water, and customers and suppliers. It is governed by the Environmental Governance Board (EGB)
- RMG has launched an LED lighting replacement program that has resulted in a savings of 4 per cent per year

**47,000**  
vehicles producing  
**66%**  
emissions

**1,949**  
sites producing  
**32%**  
emissions

**726, 000**  
tonnes total CO<sub>2</sub>e  
emitted from  
building & fleet

- RMG has adopted solar panels, smart mechanical cooling systems, and reduced the quantity of lights at select building sites to reduce energy consumption

- RMG is currently trialling more fuel efficient vehicles and alternative fuel vehicles until their "fleet environment strategy" is completed in 2017

- 91 per cent of heavy goods vehicles (HGVs) are equipped with driver telemetry to reduce fuel consumption

- RMG has reviewed network and routes taken to reduce daily mileage by 17,000 miles per day (5.3 million miles per year)
- RMG collaborated with trailer manufacturers to develop the Cartwright Cheetah Fastback Trailer – a single-deck trailer that uses lightweight materials and aerodynamic design - and is expected to save 8 per cent in fuel consumption

**Trend 3: Stakeholder Pressure & Environmental Awareness**

British stakeholders of all type are becoming more aware of the environmental implications of their day-to-day choices.<sup>105</sup> This awareness is manifesting itself not only in their purchasing decisions, but in the expectations they have for the businesses they

<sup>105</sup> Butler, S. (2013, August 19). Ethical shopping growing in popularity, survey suggests. *The Guardian*. Retrieved from : <https://www.theguardian.com/business/2013/aug/19/ethical-shopping-growing-popularity-fairtrade>



interact with. RMG lists its stakeholders as a variety of “customers, investors, unions, communities, suppliers and government”. In order to identify material issues related to business, RMG conducts regular stakeholder engagement using surveys, interviews and stakeholder panels in order to determine their views, acquire constructive feedback, and understand needs and expectations.

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*“Transparency strengthens our brand and helps people understand our business including the challenges and opportunities we face.”*

– 2016 Corporate Responsibility Report pg. 32

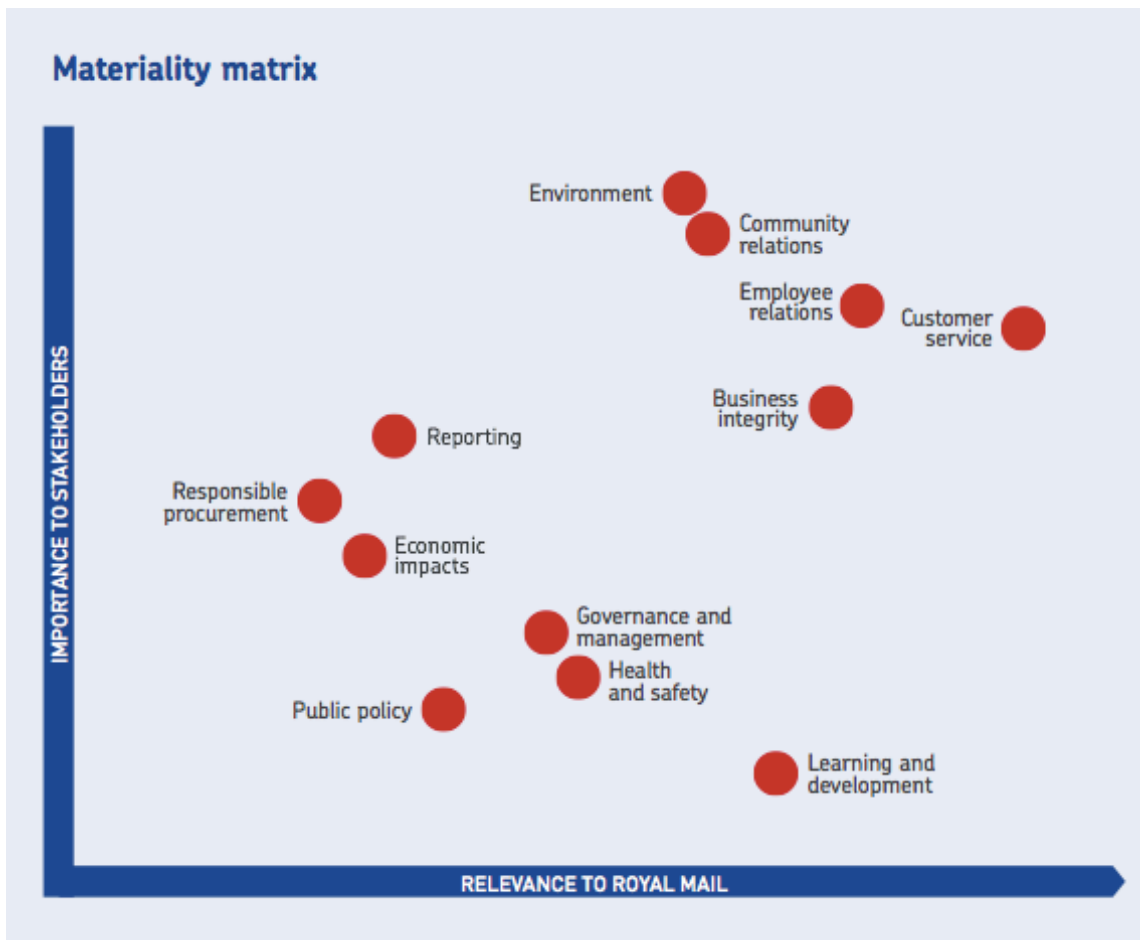
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### *How Royal Mail Group Limited is responding to this trend through an environmental lens*

- ✚ Reporting in accordance with the GRI G4 framework.
- ✚ Corporate Responsibility Report under ISO 14001, AA1000AA and ISAE3000
- ✚ Member of the United Nations Global Compact
- ✚ Stakeholders are addressed in all but one section (suppliers) in the Corporate Responsibility report
- ✚ RMG has produced a Stakeholder Summary based on their engagement practices that identifies issues, expectations and future actions. The publicly available summary is provided on page 16 of the 2015/16 Corporate Responsibility Report<sup>106</sup>
- ✚ RMG completed a materiality assessment of environmental, social and governance issues that apply to the business. This materiality assessment is based on engagement with both internal and external stakeholders. The publicly available Materiality Assessment is provided below

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<sup>106</sup> Royal Mail. (2016). Corporate Responsibility Report 2015-16. Retrieved from : <http://www.royalmailgroup.com/sites/default/files/Royal%20Mail%20Corporate%20Responsibility%20Report%202015-16.pdf>



Source: 2015/16 Royal Mail Corporate Responsibility Report (pg.13)

## Royal Mail Group Evaluation

Overall, Royal Mail Group has embedded sustainability principles at the foundation of their operations. Their reporting on most issues is transparent and thorough. They possess a comprehensive environmental policy that sets short and long term goals and standards along with action items for accomplishing these targets. It is clear that stakeholder engagement is at the base of many of RMG's strategies and initiatives as they execute robust and consistent stakeholder engagement activities. RMG appears to be making consistent and measurable progress from its baseline through the successful execution of various initiatives and internal policies (including the responsible procurement code of conduct and the corporate responsibility policy). RMG acknowledges that carbon taxes and other compliance policies aimed at reducing climate change pose a threat to operations. Simultaneously, Royal Mail recognizes the need for continued improvement in their endeavour to lower environmental impacts and increase efficiency.

Table 3 provides a comparison of Royal Mail’s data against the industry standards as set out by the IPC.

**Table 3. RMG comparison against IPC averages**

	IPC Industry Standard	Royal Mail Group
<b>Quantitative</b>		
<b>Carbon Emissions (tonnes CO<sub>2</sub>)</b>		
Buildings	<b>39,800</b>	74,353
Fleet	<b>342,600</b>	479,226 <sup>107</sup>
Total	<b>382,400</b>	726,000
Delivery Efficiency (grams CO <sub>2</sub> /letter)	<b>37.2</b>	not disclosed
Delivery Efficiency (grams CO <sub>2</sub> /parcel)	<b>439.9</b>	not disclosed
Fuel Consumption (millions of litres)	<b>sector averages not disclosed</b>	130
Electricity Consumption (MWh)	<b>sector averages not disclosed<sup>108</sup></b>	411
<b>Qualitative</b>		
Carbon Management	<b>85%<sup>109</sup></b>	<b>undisclosed</b>
Number of Vehicles in Fleet	<b>32,000<sup>110</sup></b>	<b>47,000</b>
Type of Vehicles in Fleet	<b>sector averages not disclosed</b>	Only disclosed vehicles: Cartwright Cheetah Fastback trailers
Number of Buildings	<b>sector averages not disclosed</b>	<b>1,949</b>
Type of Fuel Used in Buildings	<b>unknown</b>	<b>undisclosed</b>
<b>Scale of Operations</b>		
Letters delivered (billions)	<b>not disclosed</b>	<b>15.6</b>
Parcels/Packages delivered (billions)	<b>not disclosed</b>	<b>1.5</b>
Drop in letter mail volume (%)	<b>not disclosed</b>	<b>3</b>
Rise in parcel/package growth (%)	<b>not disclosed</b>	<b>3</b>

<sup>107</sup> From vehicle fleet and transport

<sup>108</sup> Total overall electricity consumption from reporting POs was 7.96TWh

<sup>109</sup> For a more detailed breakdown of how this industry average was obtained. See International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

<sup>110</sup> The IPC indicates the aggregated number of vehicles for all reporting POs as 652,000. The author has divided this by 20 – the number of EMMS members – to find the average.

Residential households served (millions)	<b>not disclosed</b>	<b>29</b>
Businesses served (millions)	<b>not disclosed</b>	<b>1.4</b>
Number of kilometres travelled (millions)	<b>not disclosed</b>	<b>84.7</b>

Sources: 2016 IPC Postal Sector Sustainability Report & the 2015/16 Royal Mail Corporate Responsibility Report and the 2015/16 Annual Report and Financial Statements.

## United States Postal Service

### Company Mission

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*“The United States Postal Service has been connecting people and communities, binding the nation together, for more than 240 years. Our mission — established by law and solidified in our commitment to our customers — is to provide reliable, efficient, trusted and affordable service to connect America and help businesses grow.”*

– USPS 2016 Annual Report pg. 2

### Environmental Approach<sup>111</sup>

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*“We’re committed to reducing our impact on the environment by being a good steward and continuously monitoring our buildings, utility consumption, water and fleets”*

- USPS 2016 Sustainability Report pg. 6-7

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## United States Postal Service Company Summary

Started in 1775, the United States Postal Service (USPS), *“an independent establishment of the executive branch of the Government of the United States”*<sup>112</sup>, is the largest postal operator in the world. In total, USPS provides universal service to all Americans and delivers 47 per cent of the world’s mail 5-6 days per week. USPS travels just under 2.3 billion kilometres annually to serve >143 million residential homes and >156 million commercial businesses.



### Governance

USPS is governed by a Board of up to nine Governors appointed by the President of the United States with no more than five coming from the same political party. Two additional members are selected by this board to act as the Postmaster General and the Deputy Postmaster General. Bound by several reporting mandates under Title 39 of the United States Code; the Board of Governors *“directs the exercise of power of the Postal Service, directs and controls its expenditures, reviews its practices, conducts long-range*

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<sup>111</sup> Note : An environmental mission/commitment was not explicitly identified in this document. This quote was generated from the “We’re Making a positive Impact” and “Energy Initiatives section. Pages and 6 respectively.

<sup>112</sup> United States Postal Service. (n.d). About. Retrieved from: [https://about.usps.com/publications/pub100/pub100\\_036.htm](https://about.usps.com/publications/pub100/pub100_036.htm)

*planning, and sets policies on all postal matters” in a way that represents the interests of the public.*

*Note: Although under control of the government, USPS does not receive any federal government funding and relies on the sales of its products to fund its operations.*

This case study explores, using an environmental lens, how USPS is performing in terms of energy consumption and GHG emissions on three of the four trends: Internet Revolution, Growing Building & Fleet Sizes, and Stakeholder Pressure & Environmental Awareness. Environmental Impact Awareness, and Policy, Climate Change Commitments & Compliance will be collectively addressed in the concluding section. Unless otherwise indicated, all information and data within this case study was obtained from the 2016 [Sustainability Report](#), the [United States Postal Service FY2016 Annual Report to Congress](#) and the [United States Postal Service Climate Change Adaptation Plan](#).

## Company Performance by the Numbers

### Trend 1: The Internet Revolution

In 2015, 84 per cent of American adults had access to the internet.<sup>113</sup> It is not surprising then that retail e-commerce in the United States reached USD\$322.17 billion in 2016.<sup>114</sup> At around 13 per cent of the online share of retail trade, it is the second largest market in the world after the United Kingdom.<sup>115</sup> USPS is adopting a variety of processes and systems in order to accommodate the growing size and volume of e-commerce parcels/packages as they predict this growth to continue.

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*“The digital economy offers an unprecedented opportunity to address the needs of both our mail and package customers, and we are making improvements to our network and infrastructure in order to meet those needs. “*

– USPS Sustainability Report pg. 25

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<sup>113</sup> Perrin, A. and Duggan, M. (2015, June 26). American Internet Access : 2000-2015. *Pew Research Center Internet & Technology*. Retrieved from : <http://www.pewinternet.org/2015/06/26/americans-internet-access-2000-2015/>

<sup>114</sup> Statista. (n.d). E-commerce in the United States – Statistics and Facts. Retrieved from: <https://www.statista.com/topics/2443/us-ecommerce/>

<sup>115</sup> The Economist. (2016, November 19). All that is solid melts into air. Retrieved from: <http://www.economist.com/news/britain/21710271-britons-do-more-their-shopping-online-almost-anyone-else-move-cyberspace>



According to the United States Postal Service, USPS is the world’s largest postal operator delivering 47 per cent of global mail. In fact, shipping/package volume reached 5.2 billion in 2016.<sup>116</sup> USPS has identified shipping and packages as the main driver of operation revenues and predicts this trend will continue. However, to what extent this will impact their carbon footprint has not been identified in USPS reports.

USPS experienced a 13.7 per cent increase in parcel volume in 2016 and although their standard letter mail volumes did not decrease, first class letter mail dropped by 2.2 per cent. Aside from discussing how operations, processing and financials are adapting to growing parcel volumes, USPS reports do not indicate how these trends influenced their environmental commitments, nor did they identify any resulting environmental impacts.



*How the United States Postal Service is responding to this trend through an environmental lens*



✚ SPS has adopted a wide-range of technologies all aimed at increasing the efficiency and speed with which they sort, process and deliver varying sizes and shapes of parcels

✚ USPS repurposes existing spaces in order to process additional packages without investing in new facilities

*Note: The 2016 USPS Annual Report discusses these technologies and operations at length; however, they do not provide adequate quantitative data and the stated goals are to minimize costs. No official environmental*

*impact or aim is mentioned.*

<sup>116</sup> United States Postal Service. (2017). A decade of facts and figures. Retrieved from: <https://about.usps.com/who-we-are/postal-facts/decade-of-facts-and-figures.htm>

**32,000**  
facilities &  
**227,000**  
vehicles producing

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**4.3 million**  
**MtCO<sub>2</sub>e**

## Trend 2: Growing Building & Fleet Sizes

Unfortunately, U.S infrastructure is ageing and inefficient. The backlog on repairs and improvements has climbed to \$3.6 trillion.<sup>117</sup> This means more delivery trucks on the road for longer periods of time emitting an increasing number of GHGs. The distance travelled by USPS vehicles, as well as the total fuel consumed has been steadily rising. In 2016 USPS delivered more than 154 billion mailpieces to 156 million addresses. In order to successfully deliver universal service to the growing number of addresses sprouting up around the United States, USPS receives, sorts and processes these mailpieces at over 32,000 facilities across the country and delivers them using 227,000 vehicles. These facilities and vehicles emit a total of 4,300,000 metric tons of carbon dioxide equivalent; the most of any postal operator in this report.

### *How the United States Postal Service is responding to this trend through an environmental lens*

- ✚ USPS has reduced facility energy consumption by around 20.6kWh per gross square foot since 2015<sup>118</sup>
- ✚ USPS has reduced Scope 1 and 2 emissions by 19.3 per cent and Scope 3 emissions by 23.6 per cent since 2008
- ✚ USPS completes a regular review of delivery infrastructure and routes in order to evaluate and re-adjust to ensure efficiency
- ✚ USPS has transitioned to a centralized delivery system in which mail for a particular complex or community is delivered to one location for pick up thereby reducing transportation emissions

## Trend 3: Stakeholder Pressure

As of 2014, American consumer behaviour still ranks as the least sustainable according to the Greendex, a report released yearly by National Geographic ranking countries on

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<sup>117</sup> Humes, E. (2016, April 8). Why the Future of E-Commerce Depends on Better Roads. *Harvard Business Review*. Retrieved from: <https://hbr.org/2016/04/why-the-future-of-e-commerce-depends-on-better-roads>

<sup>118</sup> USPS does not indicate how many gross square feet of facility space they use ; therefore it is difficult to determine to what extent this data is an achievement



their sustainability lifestyles and behaviours.<sup>119</sup> Despite this and although American president Donald Trump pulled out of the Paris Climate deal on June 1<sup>st</sup>, 2017, hundreds of businesses, investors, educational institutions, states, cities, and counties signed the “We are still in” pledge to the United Nations that they would continue to do their part in helping the U.S achieve their COP21 goal of reducing the country’s carbon emissions 26 per cent below 2005 levels by 2025.<sup>120</sup> Although USPS has identified stakeholders as “commercial and residential customers, legislators, (and) regulators”, many of the signatories, including e-commerce sites such as Amazon and Etsy, global retail giants such as Nike and Apple and countless higher education institutions, cities and counties are direct stakeholders of the United States Postal Service.<sup>121</sup>

It is clear that the actions and operations of USPS can impact and be impacted by these and many other businesses and organizations. According to the Postal Service, USPS “engage(s) our stakeholders to determine which aspects – or key issues – of our organization are most important (material) to our operations” (pg.iv)

### *How the United States Postal Service is responding to this trend through an environmental lens*

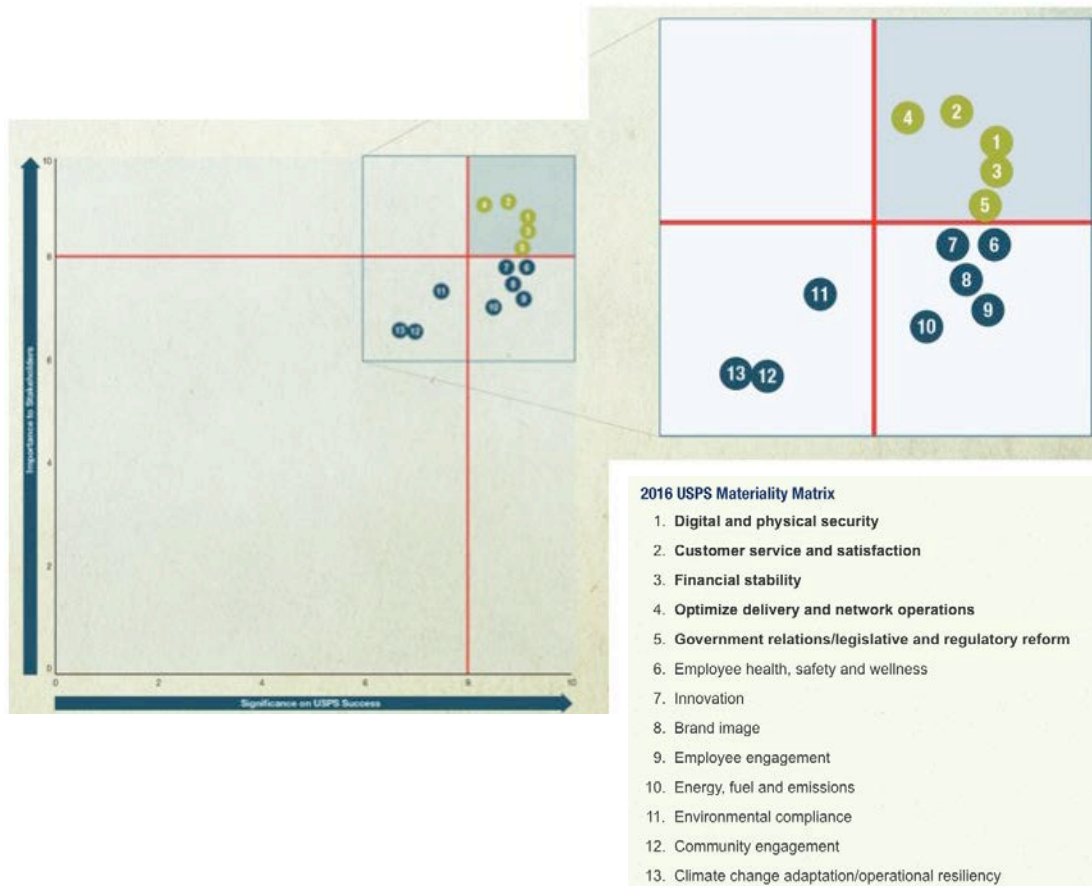
- ✚ USPS uses the GRI (G4) reporting structure for their sustainability report
- ✚ USPS completed a materiality assessment for their 2016 Sustainability Report, which is publicly available (pg. v) and is provided below

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<sup>119</sup> National Geographic. (2014). Greendex 2014 : Consumer Choice and the Environment – A Worldwide Tracking Survey. Retrieved from : [http://images.nationalgeographic.com/wpf/media-content/file/NGS\\_2014\\_Greendex\\_Highlights\\_FINAL-cb1411689730.pdf](http://images.nationalgeographic.com/wpf/media-content/file/NGS_2014_Greendex_Highlights_FINAL-cb1411689730.pdf)

<sup>120</sup> The Economist. ( 2017, June 10). Big business sees the promise of clean energy. Retrieved from: <http://www.economist.com/news/business/21723160-american-firms-can-offset-donald-trumps-pullout-paris-big-business-sees-promise?zid=313&ah=fe2aac0b11adef572d67aed9273b6e55>

<sup>121</sup> We are Still In. (n.d). Open letter to the international community and parties to the Paris Agreement from U.S. state, local, and business leaders. Retrieved from: <http://wearestillin.com>



Source: United States Postal Service 2016 Sustainability Report

## United States Postal Service Evaluation

Overall, USPS is taking a compliance approach to mitigating operational emissions. Due to the size of their fleet and building stock, the process has been slow and difficult. USPS discusses intentions and considerations for greening operations; however, there is not yet a concrete action plan with step-by-step stages for how targets such as operational resiliency or reducing fleet-wide per-mile GHG reductions will be accomplished. USPS remains very non-committal in their publicly available documentation and uses terminology such as “we’ll consider” and “we’ll continue to explore”. Similarly, how a rise in delivery points, increased number of parcels/packages, newly introduced Sunday service and same-day delivery and will factor into these targets has not been addressed.

USPS acknowledges weaknesses and areas where they can improve, but do not indicate/quantify how they will do this or provide any measurements to show how executed initiatives or partnerships have yielded positive, intended results. USPS have acknowledged that over half of their LLVs were purchased between 1987 and 2001 and

are thus beyond their useful lifespan and pledged to gradually replace them with fuel-efficient vehicles but have not defined “fuel-efficient” or any minimum standards and expectations that USPS will be adhering to.

Although USPS indicates that they engage with stakeholders, they do not identify who stakeholders are or how and to what extent they engage.

Table 4 provides a comparison of United States Postal Service data against the industry standards as set out by the IPC.

**Table 4. USPS comparison against IPC averages**

	IPC Industry Standard	United States Postal Service
<b>Quantitative</b>		
<b>Carbon Emissions (tonnes CO<sub>2</sub>)</b>		
Buildings	<b>39,800</b>	data not de-aggregated
Fleet	<b>342,600</b>	data not de-aggregated
Total	<b>382,400</b>	4,300,000
Delivery Efficiency (grams CO <sub>2</sub> /letter)	<b>37.2</b>	undisclosed
Delivery Efficiency (grams CO <sub>2</sub> /parcel)	<b>439.9</b>	undisclosed
Fuel Consumption (millions of litres)	<b>sector averages not disclosed</b>	692,129,464 <sup>122</sup>
Electricity Consumption (MWh)	<b>sector averages not disclosed<sup>123</sup></b>	undisclosed
<b>Qualitative</b>		
Carbon Management	<b>85%<sup>124</sup></b>	undisclosed
Number of Vehicles in Fleet	<b>32,000<sup>125</sup></b>	<b>227,000</b>
Type of Vehicles in Fleet	<b>sector averages not disclosed</b>	<b>undisclosed</b>
Number of Buildings	<b>sector averages not disclosed</b>	<b>32,000</b>

<sup>122</sup> Converted from 182,841,261 GGE (gallons gasoline equivalent)

<sup>123</sup> Total overall electricity consumption from reporting POs was 7.96TWh

<sup>124</sup> For a more detailed breakdown of how this industry average was obtained. See International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

<sup>125</sup> The IPC indicates the aggregated number of vehicles for all reporting POs as 652,000. The author has divided this by 20 – the number of EMMS members – to find the average.

Scale of Operations		
Letters delivered (billions)	<b>not disclosed</b>	<b>85.1<sup>126</sup></b>
Parcels/Packages delivered (billions)	<b>not disclosed</b>	5.2
Drop in letter mail volume (%)	<b>not disclosed</b>	0 – regular mail 2.2 – first class mail
Rise in parcel/package growth (%)	<b>not disclosed</b>	13.7
Residential households served (millions)	<b>not disclosed</b>	143,283,268
Businesses served (millions)	<b>not disclosed</b>	156,094,180
Number of kilometres travelled (millions)	<b>not disclosed</b>	2,251,326,849

Sources: 2016 IPC Postal Sector Sustainability Report & the 2016 United States Postal Service Sustainability Report, the FY2016 Annual Report to Congress and the United States Postal Service Climate Change Adaptation Plan.

<sup>126</sup> This number is an estimation based on the 2015 Postal Facts document released by USPS and retrieved from: <https://about.usps.com/who-we-are/postal-facts/postalfacts2015.pdf>. The most recent reporting year is 2014 and shows the year's mailpiece breakdown as: total first-class mail volume = 63.6B and first-class single piece mail volume = 21.5B. The author added these two number to obtain a proxy value for 2016 where these numbers are not specifically reported.

## Australia Post

### Company Purpose

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*“Helping our people, customers and communities deliver a better future. Everyone. Everywhere. Everyday...this means that we're focused on identifying new opportunities to meet the contemporary expectations and needs of customers and communities across Australia. And we do this while embracing a set of common enterprise-wide values, shared by everyone across our business.”*

– Australia Post<sup>127</sup>

### Environmental Policy

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*“We have a comprehensive approach to environmental sustainability, which is outlined in our Environmental Sustainability Strategy. Our aim is to be recognized as a leader in environmental sustainability... Our Environment Policy reinforces our commitment and precautionary approach to environmental sustainability. It also demonstrates our understanding that our actions are important to our customers and our people, as well as our business outcomes.*

– Australia Post Environmental Policy<sup>128</sup>

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<sup>127</sup> Australia Post. (n.d). Our purpose and values. Retrieved from: <https://auspost.com.au/about-us/corporate-responsibility/our-approach-to-corporate-responsibility/our-purpose-and-values>

<sup>128</sup> Australia Post. (n.d). Environmental policy. Retrieved from: <https://auspost.com.au/about-us/corporate-responsibility/environment/environmental-policy>

## Australia Post Company Summary

Australia Post (AP) was formed in 1809 and has remained Australia's primary national postal operator for over 200 years. Together with StarTrack, a transport and logistics company, Australia Post travels 350 million kilometres providing universal service to 11.5 million residential and business delivery points across the country five days a week.<sup>129</sup>



### Governance

AP is a “self-funded government business” that is bound by the Australian Postal Corporation Act 1989<sup>130</sup> as well as the Australian Postal (Performance Standards) Regulations 1998<sup>131</sup> (generated under the aforementioned act). It is governed by a board of no more than eight appointed non-executive members. The Chairperson/Chief Executive Officer appointment is determined by the Board.<sup>132</sup> The Board is responsible for deciding which policies, strategies and objectives AP follows as well as ensuring that AP behaves in a manner that is “proper, efficient and consistent with sound commercial practice”<sup>133</sup> both within and outside Australia.<sup>134</sup>

*Note: Although the federal government acts as AP's sole shareholder, AP does not receive any federal government funding.*

This case study explores, using an environmental lens, how AP is performing in terms of energy consumption and GHG emissions on three of the four trends: Internet Revolution, Growing Building & Fleet Sizes, and Stakeholder Pressure & Environmental Awareness. Environmental Impact Awareness, and Policy, Climate Change Commitments & Compliance will be collectively addressed in the concluding section.

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<sup>129</sup> At the time of writing, Australia Post was in talks to partner with Aramax, another logistics company and the largest parcel operator in the Middle East. This partnership is aimed at strengthening AP's e-commerce parcel operations, particularly in Asia.

<sup>130</sup> Commonwealth Consolidated Acts. (n.d). Australian Postal Corporation Act 1989. Retrieved from : [http://www.austlii.edu.au/au/legis/cth/consol\\_act/apca1989337/](http://www.austlii.edu.au/au/legis/cth/consol_act/apca1989337/)

<sup>131</sup> Australian Government. (n.d). Australian Postal Corporation (Performance Standards) Regulations 1998. Retrieved from: <https://www.legislation.gov.au/Details/F2016C00078>

<sup>132</sup> Note: At the time of writing, two board positions were vacant and the Chairman and CEO of Australia Post, Ahmed Fahour, had recently tendered his resignation. No mention was made as to whether his successor would take up a role on the board.

<sup>133</sup> Commonwealth Consolidated Acts. (n.d). Australian Postal Corporation Act 1989. Retrieved from : [http://www.austlii.edu.au/au/legis/cth/consol\\_act/apca1989337/](http://www.austlii.edu.au/au/legis/cth/consol_act/apca1989337/)

<sup>134</sup> Australian Government. (n.d). Australia Post. Retrieved from : <https://www.ausgovboards.gov.au/boards/australia-post>

Unless otherwise indicated, all information and data within this case study was obtained from the 2016 [Australia Post Annual Report](#) – an integration of the annual and corporate responsibility reports.

## Company Performance by the Numbers

### Trend 1: The Internet Revolution



Australia Post, like many other postal operators, continues to experience an accelerated decline in the annual volume of letter mail due to e-substitution. Changing behaviours and expectations of customers have continued to impact AP's operations. As of 2015, 86 per cent of all households in Australia had access to the internet.<sup>135</sup> And although this has largely led to Australians performing day-to-day transactions online, one of



these transactions – shopping – has led to a rise in parcels and packages for AP. In the FY2015, 75 per cent of parcels delivered to Australian homes originated from online transactions. According to the Australian Bureau of Statistics<sup>136</sup>, income from the online sale of goods reached \$286 billion in 2014-15 and this number is expected to continue rising. The 4.1 per cent volume growth of e-commerce in 2015<sup>137</sup> has prompted continued adaptation and development of AP's e-commerce networks, business and operations, including a 2017 partnership with Aramex, an express delivery and logistics company.

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*"Our future is clearly linked to enabling and supporting the growth of e-commerce"*  
- John Stanhope, Chairman, Australia Post

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*"For a number of years now, Australia Post has been transforming into a parcel delivery and trusted service provider that enables all Australians to participate in e-commerce."*  
- Ahmed Fahour, Managing Director and Group CEO, Australia Post

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<sup>135</sup> Australian Bureau of Statistics. (2016). Household Use of Information Technology, Australia, 2014-15. Retrieved from: <http://www.abs.gov.au/ausstats/abs@.nsf/mf/8146.0>

<sup>136</sup> Australian Bureau of Statistics. (2016). Summary of IT Use and Innovation in Australian Business, 2014-15. Retrieved from:

<sup>137</sup> Australia Post. (2015). Annual Report 2015. Retrieved from: <http://auspost.com.au/annualreport2015/docs/australia-post-annual-report-2015.pdf>

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*“The internet, mobile communications and social media have all conspired to undermine our letters service.”*

– 2015 Annual Report pg. 38

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### *How Australia Post is responding to this trend through an environmental lens*

- ✚ AP introduced >18,000 parcel lockers where customers can pick up and drop off parcels/packages. This will lower AP’s Scope 1 carbon footprint<sup>138</sup>
- ✚ AP assesses and analyses delivery routes and type of transport used to improve delivery efficiency
- ✚ Upgraded facilities in major cities (Melbourne and Sydney) to enable the quicker and more efficient handling of parcels

**4,392**

**post offices**

**>11,000**

**vehicles**

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**881,680**

**MtCO<sub>2</sub>e generated  
by Scope 1, 2, 3,  
operations**

### **Trend 2: Growing Building & Fleet Sizes**

Australia Post operates the continent’s largest retail network. With the growing volume of parcels altering the way customers interact with AP, this postal operator is transforming in an effort to adapt to changing needs and behaviours. This is especially significant due to the vastness of the country and the number of remote areas. Including AP’s main parcel handler, StarTrack, the company operates a fleet of more than 11,000 vehicles<sup>139</sup> that include fuel-efficient motorbikes, vans, hybrids, and sedans as well as carbon-free electric vehicles, e-bikes and trikes. In order to accept, process and store mail pieces, AP has 4,392 post offices scattered across the country that collectively account for roughly two-thirds of total company carbon emissions. Scope 1, 2 and 3 emissions for the FY2016 generated a total of 881,680MtCO<sub>2</sub>e.<sup>140</sup>

### *How Australia Post is responding to this trend through an environmental lens*

- ✚ In 2017, AP launched an electric vehicle delivery pilot that tested EVs equipped to carry 195kg – enough for 1,200 letters and 100 small parcels<sup>141</sup> meaning that

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<sup>138</sup> Note: The tradeoff is that those GHGs might be absorbed by Scope 3 emissions; however, if people are living close to parcel lockers and walk or are picking up parcels up on their way to other places then overall emissions could decline.

<sup>139</sup> StarTrack. (n.d). An unrivalled delivery network. Retrieved from : <https://startrack.com.au/about-us/our-network>

<sup>140</sup> Note : this unit of measurement was not directly indicated in the Annual Report, but was an assumption by the author based on the units used for similar information



- letter carriers will also now deliver parcels thereby absorbing some of the parcel volume load.
- ✚ 24/7 parcel lockers means customers can pick up their parcels when it is convenient for them thereby avoiding repeated attempts at delivery and the associated carbon emissions.
  - ✚ AP uses a variety of delivery methods including, motorbikes, vans, hybrids, and sedans that have enhanced fuel efficiency and saved AP 1,446MtCO<sub>2</sub>e in FY2014<sup>142</sup>
  - ✚ AP uses electric bikes and trikes to deliver parcels and packages. This reduces carbon emissions generally caused by LDVs
  - ✚ Postal workers in regions collect mail from posting boxes on their way back from their route – this decreases carbon emissions and energy spent on stand-alone pick-up service
  - ✚ In FY2014, energy efficiency activity generated an electricity savings of 3,704 MWh and saved 3,222Mt CO<sub>2</sub>e<sup>143</sup>
  - ✚ Solar installations around the country have resulted in the generation of 619kW of energy and saved 835 tonnes CO<sub>2</sub>e

### Trend 3: Stakeholder Pressure

According to Greenpeace Australia<sup>144</sup>, Australians rank relatively low on the Greendex, a yearly report released by National Geographic ranking countries on their sustainability lifestyles and behaviours. In fact, the Australian Bureau of Statistics<sup>145</sup> found that concerns and attitudes toward the environment have taken a downturn. This may be the reason for Australia's ecological footprint ranking 13<sup>th</sup> in the world.<sup>146</sup> This lack of overall concern for the environment remains an important reason why Australia Post, a government entity, needs to be a leader in taking environmental concerns seriously. AP acknowledges its operations have an impact on the environment and the importance of being conscious of how their operations and decisions impact their stakeholders and the environment. AP identifies their key stakeholders as their employees, customers and broader community, sole shareholder (Australian Government), regulatory bodies,

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<sup>141</sup> Australia Post Newsroom. (2017, March 9). Australia Post Electric delivery vehicle pilot. Retrieved from: <https://auspost.newsroom.com.au/Content/Default/02-News/Article/Australia-Post-Electric-delivery-vehicle-pilot/-/3/2/6136>

<sup>142</sup> Carbon Disclosure Project. (n.d). Climate Change 2015 Information Request Australia Post. Retrieved from : <http://auspost.com.au/annualreport2015/docs/2015-carbon-disclosure-report-submission.pdf>

<sup>143</sup> Carbon Disclosure Project. (n.d). Climate Change 2015 Information Request Australia Post. Retrieved from : <http://auspost.com.au/annualreport2015/docs/2015-carbon-disclosure-report-submission.pdf>

<sup>144</sup> Suriyaarachchi, R. (2014, October 21). How Green are Australians? Retrieved from : <http://www.greenpeace.org.au/blog/green-australians/#.WULEfBR9fm0>

<sup>145</sup> Australian Bureau of Statistics. (2010, June 30). Environmental Awareness and Action. Retrieved from : <http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4626.0.55.001main+features32011-12>

<sup>146</sup> Arnold, S. (2017, March 25). State of the Environment Report 2016 : What is Australia's carrying capacity ? *Independent Australian*. Retrieved from : <https://independentaustralia.net/environment/environment-display/what-is-australias-carrying-capacity,10142>

suppliers, industry organizations, environmental groups, and peak bodies and has a Stakeholder Council, which is chaired by a Board member.

AP engages with these stakeholders through surveys, polls, discussion forums, focus groups, face-to-face, and online (the National Conversation).

“We (Australia Post) know that our future success will largely depend on the support of our key stakeholders and we place a high premium on engaging them in the important decisions that shape our future.”

– 2015 Annual Report pg.16

After consultation with stakeholders, Australia Post has also identified the following materiality issues:

Top 10 material issues 2016	
1. Customer experience	6. eCommerce expertise
2. Community relations	7. Support for the vulnerable
3. Innovate/co-create	8. Digital access
4. Operating profitability	9. Greenhouse gas emissions
5. Transparency and disclosure	10. Fair labour practices

Source: Australia Post Annual Report 2016

Australia Post	External stakeholders	Overall
Employee safety	Innovate/co-create	Customer experience
Customer data security	Customer experience	Community relations
Diversity and inclusion	Community relations	Innovate/co-create
Fair labour practices	Operating profitably	Operating profitably
Workforce engagement	Transparency and disclosure	Transparency and disclosure
Employer of choice	eCommerce expertise	eCommerce expertise
Community relations	Post Office network	Support for the vulnerable
New products, services and/or business models	Greenhouse gas emissions	Digital access
Workforce digital capability	Digital access	Greenhouse gas emissions
Viable parcel business	Support for the vulnerable	Fair treatment of suppliers

■ Our customer network  
 ■ Business performance  
 ■ Our innovation Our expertise  
 ■ Our customers Our communities  
 ■ Our people  
 ■ Or environment Our responsibilities

Source: Australia Post Annual Report 2016

## *How Australia Post is responding to this trend through an environmental lens*

- ✚ Annual Report under GRI G4 reporting
- ✚ Environmental management system that is aligned with the ISO14001 that monitors environmental impacts
- ✚ Member of the United Nations Global Compact
- ✚ AP has a stakeholder council headed by a Board member. This council provides guidance and advice on a range of issues, including environmental matters
- ✚ AP uses a variety of different mediums to collect data on stakeholder opinion and feedback and uses this to guide future behaviours, operations and issues material to AP
- ✚ AP is a member of the United Nations Global Compact (UNGC), which has an established set of principles for human rights, labour, environment and anti-corruption<sup>147</sup>
- ✚ Key stakeholders are bound to codes of conduct to ensure alignment of company goals and expectations. For example, the supplier code of conduct outlines social, environmental and ethical standards

## **Australia Post Evaluation**

Like USPS, Australia Post appears to be taking steps in the right direction. There is an ongoing effort to shift to procuring renewable energy sources to fuel operations and invest in diverse alternative-fuel vehicles for distribution. However, there are still several gaps in sustainability reporting. AP does not actually list an environmental issue as part of their concerns in the materiality assessment. The data made publicly available is not transparent. For example, AP does not explicitly report the amount of GHGs emitted by buildings or vehicles separately. Instead emissions are reported by scope. Similarly, the total amount of vehicles in the AP fleet could not be found in annual or sustainability reports. This information was recovered from the StarTrack website and did not indicate whether these were the group's total vehicle fleet or whether they only included StarTrack's fleet. At times AP made general statements without evidence or examples. For instance, AP claims that there were several reductions in various sector emissions however this number was given in percentages and concrete base values and numbers were withheld. Similarly, the group stated that there was a significant rise in parcel volume but never actually said how much.

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<sup>147</sup> United Nations Global Compact. (n.d). The power of principles. Retrieved from : <https://www.unglobalcompact.org/what-is-gc/mission/principles>

Table 5 provides a comparison of United States Postal Service data against the industry standards as set out by the IPC.

**Table 5. AP comparison against IPC averages**

	IPC Industry Standard	Australia Post
<b>Quantitative</b>		
<b>Carbon Emissions (tonnes CO<sub>2</sub>)</b>		
Buildings	<b>39,800</b>	169,447 <sup>148</sup>
Fleet	<b>342,600</b>	356,406 <sup>149</sup>
Total	<b>382,400</b>	525,853
Delivery Efficiency (grams CO <sub>2</sub> /letter)	<b>37.2</b>	not disclosed
Delivery Efficiency (grams CO <sub>2</sub> /parcel)	<b>439.9</b>	not disclosed
Fuel Consumption (millions of litres)	<b>sector averages not disclosed</b>	not disclosed
Electricity Consumption (MWh)	<b>sector averages not disclosed<sup>150</sup></b>	not disclosed
Purchased Electricity		not disclosed
<b>Qualitative</b>		
Carbon Management	<b>85%<sup>151</sup></b>	not disclosed
Number of Vehicles in Fleet	<b>32,000<sup>152</sup></b>	12,000 <sup>153</sup>
Type of Vehicles in Fleet	<b>sector averages not disclosed</b>	Toyota Corolla, Renault Vans, Fuso Trucks <sup>154</sup>
Number of Buildings	<b>sector averages not disclosed</b>	> 4,392

<sup>148</sup> The Australia Post 2016 Annual Report indicates Scope 2 emissions as: Electricity Grid. The author has made the assumption that these emissions are generated due to electricity for buildings and has applied them to emissions in this category.

<sup>149</sup> The Australia Post 2016 Annual Report indicates Scope 1 emissions as: Natural Gas, LPG (All), Diesel including generation & Petrol. Scope 3 emissions include “subcontracted road transport”. The author has made the assumption that these are predominately from fleet operations and has applied them to the emissions in this category.

<sup>150</sup> Total overall electricity consumption from reporting POs was 7.96TWh

<sup>151</sup> For a more detailed breakdown of how this industry average was obtained. See International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

<sup>152</sup> The IPC indicates the aggregated number of vehicles for all reporting POs as 652,000. The author has divided this by 20 – the number of EMMS members – to find the average.

<sup>153</sup> Australia Post. (2015). United Nations Global Compact : Australian Postal Corporation 2015 Communication on Progress. Retrieved from : [https://auspost.com.au/content/dam/auspost\\_corp/media/documents/global-compact-report-2015.pdf](https://auspost.com.au/content/dam/auspost_corp/media/documents/global-compact-report-2015.pdf)

<sup>154</sup> These are the main vehicles disclosed in the 2015 Carbon Disclosure Project report

Scale of Operations		
Letters delivered (billions)	<b>not disclosed</b>	3
Parcels/Packages delivered (billions)	<b>not disclosed</b>	not disclosed
Drop in letter mail volume (%)	<b>not disclosed</b>	9.7
Rise in parcel/package growth (%)	<b>not disclosed</b>	not disclosed
Residential households served (millions)	<b>not disclosed</b>	11.5 <sup>155</sup>
Businesses served (millions)	<b>not disclosed</b>	
Number of kilometres travelled (millions)	<b>not disclosed</b>	350

Sources: 2016 IPC Postal Sector Sustainability Report & 2016 the Australia Post Annual Report

<sup>155</sup> Australia Post does not distinguish between residential and commercial clients. It identifies having 11.5 million “delivery points”. The author assumes this number includes both commercial and residential service areas.

## Canada Post

### Company Purpose

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*“The Canada Post Corporation was created to provide a standard of service that meets the needs of the people of Canada. The Government of Canada is committed to ensuring transparency in how Canada Post provides quality postal services to all Canadians, rural and urban, individuals and businesses, in a secure and financially self-sustaining manner.”*

*to provide a stan*

– Annual Report – pg.22

### Environmental Policy

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*The Corporation is committed to comply with applicable environmental standards and regulations and to establishing an environmental management structure that will ensure compliance.*

*The Corporation is committed to the conservation of resources through the implementation of energy conservation strategies and recycling programs, and by encouraging the purchase and use of supplies that are recycled, recyclable, reusable, renewable or otherwise environmentally sustainable.*

– Canada Post<sup>156</sup>

## Canada Post Company Summary

Canada Post (CP), the nation’s primary postal operator and the largest retail network in Canada, has been providing service since 1763, 104 years before confederation. Along with Purolator (freight and parcel solutions provider), Holdings Ltd., SCI Group Inc. (supply chain solutions provider), and Innovapost Inc. (Information Technology shared services provider), Canada Post travels 91 million kilometres to deliver mail, parcels and messages to 16 million delivery points, 5-6 days per week. CP provides universal service as per the Canadian Postal Service Charter, which was established by the Government of Canada.



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<sup>156</sup> Canada Post. (2017). Environment Policy. Retrieved from: <https://www.canadapost.ca/web/en/pages/aboutus/details.page?article=environmentalpolicy>

## Governance

Canada Post is governed by a Board of Directors, which is made up of 11 governor-in-council appointed members, including the President and CEO.<sup>157</sup> Bound by statutory frameworks, bylaws and the Canadian Postal Service Charter, the Board reports to Parliament via the Minister of Transport, Infrastructure and Communities.<sup>158</sup> The Board guides and helps develop strategies that assist in helping the company grow based on greater efficiency, productivity and under a competitive cost structure. It is also tasked to act in the best interests of its employees, the Corporation and all Canadians.

This case study explores, using an environmental lens, how CP is performing in terms of energy consumption and GHG emissions on three of the four trends: Internet Revolution, Growing Building & Fleet Sizes, and Stakeholder Pressure & Environmental Awareness. Environmental Impact Awareness, and Policy, Climate Change Commitments & Compliance will be collectively addressed in the concluding section. Unless otherwise indicated, all information and data within this case study was obtained from the 2016 [Social Responsibility Report](#) and the [2016 Annual Report](#).

## Company Performance by the Numbers

### Trend 1: The Internet Revolution

E-commerce and digital technology has been a significant driver of change for CP. Canadian retailers have been slow to innovate in terms of their online platforms and digital technologies<sup>159</sup>, however, the thirst for the convenience of online shopping continues to grow for Canadians and with it, retailers are starting to shift.<sup>160</sup> 88.5 per cent of the Canadian population have access to the internet<sup>161</sup>, but regardless of where Canadians are making their e-purchases – domestically or internationally – CP has begun to build a strong platform for managing growing parcel volumes, which they predict will continue to increase at exponential rates in the coming years.



<sup>157</sup> Note : As of March 23, 2017, one seat on the board was vacant

<sup>158</sup> Office of the Auditor General of Canada. (2009). Canada Post Corporation: Special Examination Report – 2009. Retrieved from: [https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport\\_en.pdf](https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport_en.pdf)

<sup>159</sup> Mohammad, Q. (2016, February 22). After years in the slow lane, Canada's e-commerce ecosystem is booming. *Canadian Business*. Retrieved from : <http://www.canadianbusiness.com/innovation/canada-ecommerce-innovators/>

<sup>160</sup> Stairs, A. (2015, December 30). The five trends that will shape how we shop in 2016. *The Globe and Mail*. Retrieved from : <https://www.theglobeandmail.com/report-on-business/rob-commentary/the-five-retail-trends-that-will-shape-how-we-shop-in-2016/article27952956/>

<sup>161</sup> Internet Live Stats. (2016). Canada Internet Users. Retrieved from : <http://www.internetlivestats.com/internet-users/canada/>

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Digital technology has disrupted many industries – but we have reinvented our company to play a new role in the lives of Canadians.

– 2016 Annual Report pg.1

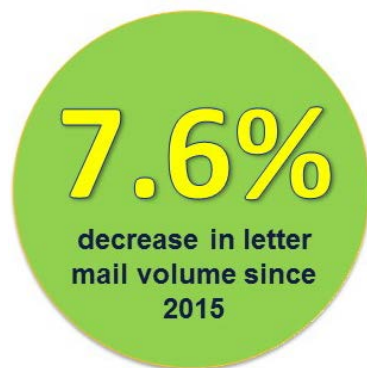
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In 2016, Canada Post delivered 14 million parcels. Of this, CP experienced a 9 per cent domestic increase and a 7.7 per cent overall increase since 2015. This is a trend CP predicts will continue. CP has acknowledged the substantial environmental impact their operations and fleet have on the environment and remain committed to reducing their GHGs despite the growing fleet and building stock required to manage increasing parcel volumes.<sup>162</sup>

On the contrary, despite the number of addresses in Canada increasing, the total number of letter pieces continues to decrease. Canada Post experienced a 7.6 per cent drop in letter mail and a 7.8 per cent drop in transaction mail from 2015.

### *How Canada Post is responding to this trend through an environmental lens*

- ✚ CP has increased the number of parcel lockers within communities thereby preventing GHGs emitted in parcel pick-up/recovery
- ✚ CP has introduced a mobile app which informs customers when parcels arrive to minimize unnecessary pick-up/drop off trips
- ✚ In 2016, CP commenced a “transformation plan” aimed at more efficiently handling parcel volumes



The parcels business is an important driver of future growth for the postal industry. E-commerce has experienced double-digit growth, globally and in Canada, for several years and is expected to continue to grow rapidly in the future.

- Annual Report pg.37

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<sup>162</sup> Canada Post. (2017). Canada Post and the Environment. Retrieved from : <https://www.canadapost.ca/web/en/pages/aboutus/details.page?article=initiatives>



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After identifying e-commerce as our major growth opportunity, we went to work, pivoting our operations to make them more parcel-centric and customer-focused.

– Canada Post Annual Report pg.6

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## Trend 2: Growing Building & Fleet Sizes

Canada Post is the nation’s primary postal operator and manages the largest retail network in Canada. E-commerce is growing across the nation, particularly in Canada’s largest cities. Consequently, fleet sizes and building stock are growing to accommodate this surge. The rise in e-retail alone has led to the need for “high-tech” distribution centres, warehouses and manufacturing facilities across the country.<sup>163</sup> According to experts, if Canada’s percentage of online retail sales continues to increase, they could be looking at a need to triple or quadruple the number of facilities in order to accommodate the demand.<sup>164</sup> This would translate to CP as well, who would require the facilities to process and store parcels coming from online purchases before delivery

**6,726**  
facilities &  
**12,700**  
vehicles producing

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**228.2**  
kilotonnes  
CO<sub>2</sub> e

to the many remote areas of the country. The ability for CP to successfully accomplish this will be the key to their e-commerce transition success.

In FY2016, Canada Post operated 12,700 vehicles – of which over half are fuel-efficient. Scope 1 and 2 emissions from ground fleet totalled 265,400 tonnes CO<sub>2</sub>e.<sup>165</sup> Their building portfolio consisted of 6,200 retail post offices, 41 processing plants and 485 letter carrier depots all generating 72.8 kilotonnes CO<sub>2</sub>e. In total, operational GHG emissions for buildings and fleet equalled 228.2 kilotonnes CO<sub>2</sub>e.<sup>166</sup>

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<sup>163</sup> Atchison, C. (2012, September 6). Virtual buying pushes warehouses to new heights. *The Globe and Mail*. Retrieved from : <https://www.theglobeandmail.com/report-on-business/industry-news/property-report/virtual-buying-pushes-warehouses-to-new-heights/article547678/>

<sup>164</sup> Atchison, C. (2012, September 6). Virtual buying pushes warehouses to new heights. *The Globe and Mail*. Retrieved from : <https://www.theglobeandmail.com/report-on-business/industry-news/property-report/virtual-buying-pushes-warehouses-to-new-heights/article547678/>

<sup>165</sup> Note: This number was derived from adding Scope 1 (owned fleet) and Scope 2 (RSMC – Rural and Suburban Mail Carrier & Subcontracted ground transportation) as identified on pg.9 of the Social Responsibility Report

<sup>166</sup> Note: the 2016 AR lists Purolator as having “its own ground fleet of more than 3,500 vehicles, 170 operations facilities, more than 100 shipping centres, approximately 900 authorized shipping agents as well as customer contact centres.” However, it is not certain whether or not CP includes the energy consumption and GHG emissions of this fleet/facilities in its carbon emission disclosure

## *How Canada Post is responding to this trend through an environmental lens*

- ✚ CP uses compact delivery vans that carry fewer letters yet have more space to accommodate parcels
- ✚ CP regularly restructures delivery routes to be more efficient
- ✚ CP has adopted new technologies to make the processing of parcels quicker and more efficient (means less energy used to do the same volume)
- ✚ CP is replacing current delivery vehicles with more fuel-efficient ones. These fuel-efficient vehicles now account for more than 50 per cent of the total fleet
- ✚ CP is continuing to retrofit existing buildings with energy efficient technologies and certified three more buildings under LEED standards in 2016

### **Trend 3: Stakeholder Pressure**

According to the National Geographic Greendex, an annual report ranking countries on their sustainability lifestyles and behaviours,<sup>167</sup> Canada has consistently found itself among the lowest countries assessed with scores dropping year upon year in most categories. Despite this, Canada ratified the Paris Agreement, which was entered into force on November 4<sup>th</sup>, 2016 agreeing to “*take ambitious efforts to combat climate change*”.<sup>168</sup> Canada Post, the largest delivery network in the country and a national symbol must be a leader in the transition to a low-carbon economy.

Despite not directly listing stakeholders in their Annual Report or Social Responsibility Report or explicitly identifying issues of materiality, Canada Post acknowledges its operations have an impact on the environment and the importance of being conscious of the social and ecological consequences of their decisions.

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Due to the nature of our business, the size of our fleet—one of the largest in Canada—and our huge network, our environmental impact is substantial.

– Canada Post<sup>169</sup>

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CP does however, report working with key stakeholders to make decisions and find solutions to improve all aspects of operations. *At the time of writing, the Government of Canada is conducting a [Canada Post Review](#) with the goal of providing strategic recommendations to ensure Canadians are receiving quality postal service. Stakeholders*

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<sup>167</sup> National Geographic. (2014). Greendex 2014 : Consumer Choice and the Environment – A Worldwide Tracking Survey. Retrieved from : [http://images.nationalgeographic.com/wpf/media-content/file/NGS\\_2014\\_Greendex\\_Highlights\\_FINAL-cb1411689730.pdf](http://images.nationalgeographic.com/wpf/media-content/file/NGS_2014_Greendex_Highlights_FINAL-cb1411689730.pdf)

<sup>168</sup> United Nations Framework Convention on Climate Change. (n.d). The Paris Agreement. Retrieved from : [http://unfccc.int/paris\\_agreement/items/9485.php](http://unfccc.int/paris_agreement/items/9485.php)

<sup>169</sup> Canada Post. (n.d). Canada Post and the Environment. Retrieved from: <https://www.canadapost.ca/web/en/pages/aboutus/details.page?article=initiatives>

*from across Canada, including municipal and federal government groups, industry groups, communities, non-profits and independent researchers, have been engaged to provide feedback to help shape the future of CP.<sup>170</sup>*

### ***How Canada Post is responding to this trend through an environmental lens***

- ✚ CP's Annual Report and Social Responsibility report follow GRI G4 reporting guidelines
- ✚ *CP is currently collaborating with the Government of Canada and vital stakeholders to review its processes – including its environmental impact – and identify, based on stakeholder consultation, solutions for improving operations*
- ✚ Both Canada Post and Australia Post acknowledge the need to provide the same service to remote areas as major cities.

## **Canada Post Evaluation**

Canada Post is making progress in terms of greening their operations. Their size and scope is relatively small compared to the other postal operators assessed in the case studies. As such, their environmental footprint is comparatively lower overall. CP has set efficient building standards for all new purchases and has invested in fuel-efficient, low emitting LDVs for day-to-day delivery operations. There are still gaps however in CP's environmental strategies. The main source of concern for CP is the lack of inclusion of outsourced delivery operations (scope 3) and leased buildings. Although CP reports on the former in their 2016 Social Responsibility Report, this value almost doubles wholly-owned fleet emissions and there is no indication or proposed plan for lowering these emissions. In addition, it is uncertain whether Purolator, CP's partner in logistics and delivery, is included in CP's measurements and reporting. Unfortunately, the same is also true for building data and emissions.

Of the four case studies, CP is the only PO not to have joined the IPC EMMS program, despite being a participant in previous years. In terms of environmental awareness and stakeholder engagement, never identifies specific stakeholders or stakeholder groups or in what medium/capacity they are engaged. Areas of materiality are also neglected so it is difficult to determine what issues and priority areas are currently affecting CP and their future approach to operations. Table 6 provides a comparison of United States Postal Service data against the industry standards as set out by the IPC.

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<sup>170</sup> Government of Canada. (2017), Canada Post Review. Retrieved from: <https://www.tpsgc-pwgsc.gc.ca/examendepostescanada-canadapostreview/index-eng.html>

**Table 6. CP comparison against IPC averages**

	<b>IPC Industry Standard</b>	<b>Canada Post Corp.</b>
<b>Quantitative</b>		
<b>Carbon Emissions (tonnes CO<sub>2</sub>)</b>		
Buildings	<b>39,800</b>	72,800
Fleet	<b>342,600</b>	365,400 <sup>171</sup>
Total	<b>382,400</b>	438,200
Delivery Efficiency (grams CO <sub>2</sub> /letter)	<b>37.2</b>	not disclosed
Delivery Efficiency (grams CO <sub>2</sub> /parcel)	<b>439.9</b>	not disclosed
Fuel Consumption (millions of litres)	<b>sector averages not disclosed</b>	24.9
Electricity Consumption (MWh)	<b>sector averages not disclosed<sup>172</sup></b>	279,258 <sup>173</sup>
Purchased Electricity	<b>sector averages not disclosed</b>	undisclosed
<b>Qualitative</b>		
Carbon Management	<b>85%<sup>174</sup></b>	undisclosed
Number of Vehicles in Fleet	<b>32,000<sup>175</sup></b>	12,700
Type of Vehicles in Fleet	<b>sector averages not disclosed</b>	Ford Fuel-efficient light vehicles, step vans, right-hand drive (light) vehicles & light vehicles (vans)
Number of Buildings	<b>sector averages not disclosed</b>	6,726 <sup>176</sup>

<b>Scale of Operations</b>		
Letters delivered (billions)	<b>not disclosed</b>	3.4
Parcels/Packages delivered (billions)	<b>not disclosed</b>	0.014
Drop in lettermail volume (%)	<b>not disclosed</b>	7.6

<sup>171</sup> This includes subcontracted vehicles for delivery as reported in the 2016 Social Responsibility Report

<sup>172</sup> Total overall electricity consumption from reporting POs was 7.96TWh

<sup>173</sup> The 2016 Social Responsibility Report indicates the annual amount of electricity consumed is 1,005,331 GJ. The author has converted this to MWh for consistency purposes.

<sup>174</sup> For a more detailed breakdown of how this industry average was obtained. See International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

<sup>175</sup> The IPC indicates the aggregated number of vehicles for all reporting POs as 652,000. The author has divided this by 20 – the number of EMMS members – to find the average.

<sup>176</sup> Canada Post reports having 6,200 retail post offices, 41 processing plants and 485 letter carrier depots. The author added these together to find the number presented.

Rise in parcel/package growth (%)	not disclosed	7.7
Residential households served (millions)	not disclosed	29
Businesses served (millions)	not disclosed	1.4
Number of kilometres travelled (millions)	not disclosed	91

Sources: 2016 IPC Postal Sector Sustainability Report & the 2016 Canada Post Social Responsibility Report

## Part 6. Conclusion

### Progress in the Logistics Sector

The volume of goods being shipped around the world is growing. As a result of globalization, this growth is projected to continue. The growth in the shipment of goods is causing industry-wide disruption in the postal sector. This disruption requires urgent attention if the postal sector is going to meet the demands of the public and fulfill its responsibility as universal service providers all while simultaneously maintaining its economic viability.

Four trends define the shifts facing the sector. Trend 1: The Internet Revolution considers the rise in volume of parcels and packages and discusses concerns about online commerce driving continued growth over time. It was acknowledged that the logistics sector cannot control this transition; however, it can prepare for it by modifying its operations and innovating in its methods and approaches to delivery.

Trend 2: Growing Building Stock & Fleet Sizes, relates to the associated building and fleet requirements needed to accommodate the first trend and highlights how fossil fuel path dependencies and centralized energy systems continue to challenge postal and logistics companies around the world in greening operations. POs currently operate under aging infrastructure<sup>177</sup> and building and fleet sizes are the largest sources of emissions. Divesting from fossil fuel intensive energy sources and transitioning to alternative technologies and fuel sources is both capital intensive, expensive and often not always feasible for public postal operators.

Trend 3: Stakeholder Pressure & Environmental Awareness is the growing public and stakeholder concern for business and government to take aggressive measures to reduce the negative externalities caused by an industry whose operations contribute to the world's main source of emissions – transportation – and to a lesser extent, buildings. As most postal operators are servants of the public who operate under a universal service obligation and are mandated, under federal obligation, to provide reliable, affordable service to all, stakeholders – both external and internal – are increasingly

<sup>177</sup> Office of the Auditor General of Canada. (2009). Canada Post Corporation: Special Examination Report – 2009. Retrieved from: [https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport\\_en.pdf](https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport_en.pdf)

looking to both business and public enterprises to collaborate and be leaders in the transition to a low-carbon economy.

Trend 4: Policy, Climate Change Commitments & Compliance, is the global commitment of the majority of nations around the world – as signatories of the Paris accord – to take “...effective and progressive response to the urgent threat of climate change...”.<sup>178</sup> In addition, most nations have provincial and federal climate change action plans aimed at lowering national emissions through policy and standards for public and private business.

Many postal operators report directly to the government in the nation in which they reside. They are often required to be financially self-sustaining while simultaneously reporting to federal entities and abiding by government-issued mandates and policies without receiving federal funding. There is an expectation to be leaders in committing to climate change adaptation and mitigation and to be significant contributors to increasing the overall resiliency of the nation to climate change and energy democracy. However, these often appear to be empty expectations. Across the board, there is an absence of enforcement of climate change policy or pressure from federal governments for postal operators to adopt climate change action plans that parallel national targets. Postal operators and private logistics companies are free to lead or lag without any pressure or real consequences. The logistics sector overall seems to be more concerned with financial viability, profit margins and reliability of service. This is often echoed in federal reviews of postal operators, which predominately focus on the POs financials. Table 7 presents a breakdown of the four postal operators in our case studies and how they are performing compared to the industry standards outlined in the International Post Corporation Sustainability Report 2016.

There are growing public and private expectations for national postal operators and private logistics firms to provide faster, more frequent and reliable service that is socially and environmentally responsible. Globalization has given rise to a strong level of dependence on the logistics sector to move goods and in so doing has acted as a significant catalyst in industrial, technological and scientific progress. There are many benefits flowing from globalization. The act of freely moving goods, capital, people, technology and services around the globe has generated a certain level of interdependence between nations while simultaneously building learning economies that act to further advance the global standard of life. Globalization has decreased barriers to science, technology and medicine and in many. Moreover, globalization has eased the process of generating economies of scale thus rendering technologies such as renewable energy and alternative-fuel vehicles more affordable.

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<sup>178</sup> United Nations. (2015). Framework Convention on Climate Change. Retrieved from: [http://unfccc.int/files/essential\\_background/convention/application/pdf/english\\_paris\\_agreement.pdf](http://unfccc.int/files/essential_background/convention/application/pdf/english_paris_agreement.pdf)

The world's growing dependence on having goods readily available has put persistent pressure on an industry that is locked-in to aging infrastructure, centralized energy systems and fossil-fuel technology. The logistics sector plays a significant role in transport and distribution. However, this increased pressure carries with it several negative externalities – and expectations. The greenhouse gases generated and the energy required as a result of this dependence will continue to rise as the population grows and demand for fast, frequent, reliable distribution persists.

Similarly, the exogenous changes currently unfolding in the postal and logistics sector are forcing POs and private firms to change their traditional methods of distribution and operations. Unfortunately, the lock-in of the postal and logistics sectors to centralized energy systems and fossil-fuel pathways is presently posing the greatest risk to long-term progress in greening these industries. Many posts around the world are dealing with aging infrastructure<sup>179</sup>, which has presented barriers to the emerging parcel needs of a system built for letter mail. The technology to break free of this lock-in is available. However the infrastructure required for the postal sector to transition to low-carbon operations is capital-intensive, expensive and oftentimes not within the financial capacity of postal operators. Audits of both USPS and Canada Post have indicated that the financial burden of upgrades such as this is the major barrier to making change.<sup>180,181</sup>

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<sup>179</sup> Office of the Auditor General of Canada. (2009). Canada Post Corporation: Special Examination Report – 2009. Retrieved from: [https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport\\_en.pdf](https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport_en.pdf)

<sup>180</sup> Office of the Auditor General of Canada. (2009). Canada Post Corporation: Special Examination Report – 2009. Retrieved from: [https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport\\_en.pdf](https://www.canadapost.ca/cpo/mc/assets/pdf/aboutus/specialreport_en.pdf)

<sup>181</sup> United States Postal Service Office of Inspector General. (2014, June 10). Delivery Vehicle Fleet Replacement. Retrieved from : <https://www.uspsoig.gov/sites/default/files/document-library-files/2015/dr-ma-14-005.pdf>

**Table 7. Postal Operator Performance as Compared to IPC Industry Averages**

	IPC Industry Standard	Royal Mail Group	United States Postal Service	Australia Post	Canada Post
<b>Quantitative</b>					
<b>Carbon Emissions (tonnes CO<sub>2</sub>)</b>					
Buildings	39,800	74,353	data not de-aggregated	169,447 <sup>182</sup>	72,800
Fleet	342,600	479,226 <sup>183</sup>	data not de-aggregated	356,406 <sup>184</sup>	365,400 <sup>185</sup>
Total	382,400	726,000	4,300,000	525,853	438,200
Delivery Efficiency (grams CO <sub>2</sub> /letter)	37.2	undisclosed	undisclosed	undisclosed	undisclosed
Delivery Efficiency (grams CO <sub>2</sub> /parcel)	439.9	undisclosed	undisclosed	undisclosed	undisclosed
Fuel Consumption (millions of litres)	sector averages not disclosed	130	692 <sup>186</sup>	undisclosed	24.9
Electricity Consumption	sector averages not disclosed <sup>187</sup>	411	undisclosed	undisclosed	279,258 <sup>188</sup>

<sup>182</sup> The Australia Post 2016 Annual Report indicates Scope 2 emissions as: Electricity Grid. The author has made the assumption that these emissions are generated due to electricity for buildings and has applied them to emissions in this category.

<sup>183</sup> From vehicle fleet and transport

<sup>184</sup> The Australia Post 2016 Annual Report indicates Scope 1 emissions as: Natural Gas, LPG (All), Diesel including generation & Petrol. Scope 3 emissions include “subcontracted road transport”. The author has made the assumption that these are predominately from fleet operations and has applied them to the emissions in this category.

<sup>185</sup> This includes subcontracted vehicles for delivery as reported in the 2016 Social Responsibility Report

<sup>186</sup> Converted from 182,841,261 GGE (gallons gasoline equivalent)

<sup>187</sup> Total overall electricity consumption from reporting POs was 7.96TWh

<sup>188</sup> The 2016 Social Responsibility Report indicates the annual amount of electricity consumed is 1,005,331 GJ. The author has converted this to MWh for consistency purposes.



	IPC Industry Standard	Royal Mail Group	United States Postal Service	Australia Post	Canada Post
<b>Qualitative</b>					
Carbon Management	85% <sup>189</sup>	undisclosed	undisclosed	undisclosed	undisclosed
Number of Vehicles in Fleet	32,000 <sup>190</sup>	47,000	227,000	12,000 <sup>191</sup>	12,700
Type of Vehicles in Fleet	sector averages not disclosed	Only disclosed vehicles: Cartwright Cheetah Fastback trailers	undisclosed	Toyota Corolla, Renault Vans, Fuso Trucks <sup>192</sup>	Ford Fuel-efficient light vehicles, step vans, right-hand drive (light) vehicles & light vehicles (vans)
Number of Buildings	sector averages not disclosed	1,949	32,000	> 4,392	6,726 <sup>193</sup>

<sup>189</sup> For a more detailed breakdown of how this industry average was obtained. See International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

<sup>190</sup> The IPC indicates the aggregated number of vehicles for all reporting POs as 652,000. The author has divided this by 20 – the number of EMMS members – to find the average.

<sup>191</sup> Australia Post. (2015). United Nations Global Compact : Australian Postal Corporation 2015 Communication on Progress. Retrieved from :

[https://auspost.com.au/content/dam/auspost\\_corp/media/documents/global-compact-report-2015.pdf](https://auspost.com.au/content/dam/auspost_corp/media/documents/global-compact-report-2015.pdf)

<sup>192</sup> These are the main vehicles disclosed in the 2015 Carbon Disclosure Project report

<sup>193</sup> Canada Post reports having 6,200 retail post offices, 41 processing plants and 485 letter carrier depots. The author added these together to find the number presented.

	IPC Industry Standard	Royal Mail Group	United States Postal Service	Australia Post	Canada Post
<b>Scale of Operations</b>					
Letters delivered (billions)	undisclosed	15.6	85.1 <sup>194</sup>	3	3.4
Parcels/Packages delivered (billions)	undisclosed	1.5	5.2	undisclosed	0.014
Drop in letter mail volume (%)	undisclosed	3	0 – regular mail 2.2 – first class mail	9.7	7.6
Rise in parcel/package growth (%)	undisclosed	3	13.7	undisclosed	7.7
Residential households served (millions)	undisclosed	29	143,283,268	11.5 <sup>195</sup>	29
Businesses served (millions)	undisclosed	1.4	156,094,180		1.4
Number of kilometres travelled (millions)	undisclosed	84.7	2,251,326,849	350	3.4

Sources: 2016 IPC Postal Sector Sustainability Report, the 2015/16 Royal Mail Corporate Responsibility Report and the 2015/16 Annual Report and Financial Statements, the 2016 United States Postal Service Sustainability Report, the FY2016 Annual Report to Congress and the United States Postal Service Climate Change Adaptation Plan, 2016 the Australia Post Annual Report and the 2016 Canada Post Social Responsibility Report

<sup>194</sup> This number is an estimation based on the 2015 Postal Facts document released by USPS and retrieved from: <https://about.usps.com/who-we-are/postal-facts/postalfacts2015.pdf>. The most recent reporting year is 2014 and shows the year's mailpiece breakdown as: total first-class mail volume = 63.6B and first-class single piece mail volume = 21.5B. The author added these two number to obtain a proxy value for 2016 where these numbers are not specifically reported.

<sup>195</sup> Australia Post does not distinguish between residential and commercial clients. It identifies having 11.5 million "delivery points". The author assumes this number includes both commercial and residential service areas.

## How is the postal sector doing?

Based on the postal operator data analysis of our small case study sample, the postal sector is indeed making progress in greening its operations and the industry overall is engaged in the issues. However, engagement varies greatly and is oftentimes inconsistent. For example, Canada Post has not updated its Climate Change Strategy since 2010 despite publicly acknowledging the impacts its operations have on climate change. Similarly, the Office of the Inspector General<sup>196</sup> has stated that although USPS has developed an acquisition strategy to replace its aging fleet, this strategy was not fully developed, lacked detail and thus has not been successfully implemented. At Australia Post, the importance of environmental sustainability in transport, facilities, procurement, product stewardship, and sustainable packaging are discussed along with key achievements to date.<sup>197</sup> However, no baseline measurement is identified, nor are clear and measurable short or long term targets explicitly set. Table 8 provides a comparison of the environmental information and targets made available by the postal operators in our case studies.

## Areas of overall success

According to the IPC Postal Sector Sustainability Report 2016,<sup>198</sup> renewable energy use has grown by 25 per cent among member POs since 2008. Participating postal operators in the EMMS program have successfully achieved an 85 per cent carbon management proficiency score and have collectively reduced emissions by 22.4 per cent since 2008 (8,830,000 tonnes to 6,852,000 tonnes). It is important to note however, that a significant portion of emissions comes from outsourcing delivery to third parties. These emissions are considered scope 3 and are thus not included in the measurement and tracking process. For example, Australia Post reports scope 3 subcontracted road transport to account for 237,061 tonnes of carbon, almost twice as much as their owned fleet.<sup>199</sup> Since 2013 delivery efficiency for parcels has improved 20 per cent<sup>200</sup> and electricity consumption has decreased by 2TWh since the 2008 baseline year.

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<sup>196</sup> United States Postal Service Office of Inspector General. (2014, June 10). Delivery Vehicle Fleet Replacement. Retrieved from : <https://www.uspsoig.gov/sites/default/files/document-library-files/2015/dr-ma-14-005.pdf>

<sup>197</sup> Australia Post (n.d). Environment. Retrieved from : <https://auspost.com.au/about-us/corporate-responsibility/environment>

<sup>198</sup> International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>

<sup>199</sup> Australia Post. (2016). Part of Tomorrow : Annual Report 2016. Retrieved from : [http://auspost.com.au/annualreport2016/resources/docs/auspost\\_annual\\_report.pdf](http://auspost.com.au/annualreport2016/resources/docs/auspost_annual_report.pdf)

<sup>200</sup> Note : the data is only available from 2013 to the most current reporting year

**Table 8. Availability of Environmental Sustainability Information by Case Study Postal Operators**

	<b>Canada Post</b>	<b>United States Postal Service</b>	<b>Australia Post</b>	<b>Royal Mail</b>
Climate change strategy	Yes (Not updated since 2010)	Yes (Not updated since 2014)	No	No
Clear, transparent, detailed environmental policy	Policy exists, but not clear or detailed and lacks explicit actionable items	No	Policy exists, but not clear or detailed and lacks explicit actionable items	Yes
Baseline measurements identified	Yes	Yes	Yes	Yes
Measureable long term goals and targets set	No	No	No	Yes
Measureable short term goals and targets set	Yes	Yes	Yes	Yes

Across the board logistics companies are adopting sustainable development goals and national postal operators specifically are implementing energy efficiency and conservation strategies, facility retrofit and refurbishment programs, alternative-fuel vehicle replacement plans and a host of actions aimed at mitigating the impacts of the industry on climate change. Table 9 lists some examples of initiatives currently in place by postal operators worldwide.

**Table 9. Postal Operator Initiatives to Reduce Sector Carbon Emissions and Energy Consumption**

<b>Initiative</b>	<b>Purpose</b>	<b>Postal operator implementing initiative</b>
<b>Internet-based time clock</b>	Reduces energy use by controlling heating and cooling in buildings based on operating schedules	An Post - Ireland

<b>E-bike/trike/LDV substitution</b>	Reduces overall distribution-induced emissions while maintaining reliable delivery standards	Bpost – Belgium Le Groupe La Poste – France Royal Mail – U.K Posten Norge – Norway PostNord - Sweden
<b>Driver training and route optimization</b>	Maximizes driver efficiency through education and training in order lower sector emissions and fuel consumption	CTT Correios de Portugal – Portugal Poste Italiane – Italy Posti - Finland
<b>Energy efficiency retrofits</b>	Installing motion detector lighting, LED lighting etc. helps to reduce energy consumption thereby lowering a POs carbon footprint	Deutsche Post DHL – Germany Österreichische Post AG - Austria
<b>Renewable energy adoption</b>	Investing in on-site renewable energy generation and/or procuring energy from renewable sources helps to secure clean energy for operations thereby reducing emissions	Le Groupe La Poste – France PostNL - Netherlands

### Areas of consistent weakness

Firstly, it should be acknowledged that one of the major weaknesses in the statistics and data outlined in the IPC sustainability report is that it is only reflective of twenty national postal operators. These are likely the highest performing ones as participating in this program and making available all data is optional. Despite this reality, there seems to be consistent under-reporting of outsourced transport and distribution providers, which has been identified as accounting for a substantial portion of operations. It is unknown whether or not this is true for facilities as well. In addition, many of the postal operators explored fail to clearly identify baseline data so that progress and development can be easily tracked. Similarly, the data provided is often incomplete. For example, USPS identifies energy consumption per square foot of building space, but does not indicate its total square footage of building space. In addition, many postal operators aggregate scope 1 and 2 emissions without presenting a detailed breakdown of where the emissions are coming from. As a result, it is difficult to know where improvements need to be made, what type of targets should be set and how to effectively measure progress.

Throughout the sustainability and annual reports postal operators have not clearly identified short and long-term goals. In the instances where they have, it has not been disclosed how the operator plans to accomplish these targets or what actions will be adopted to ensure success. Table 10 summarizes the areas of weakness in the postal

and logistics sectors. Lastly, postal operators across all five case studies do not appear to have climate change action plans, targets or policies that align with the nationally determined contributions of their federal governments. This could prove problematic in minimizing this sector's emissions.

**Table 10. Consistent Areas of Weakness in the Postal Sector**

- ✚ Small sample size provides industry averages
- ✚ Under-reporting of GHGs and energy consumption of outsourced distribution operations
- ✚ Under-reporting of the extent to which outsourced transportation is used and what percentage of operations outsourcing is responsible for
- ✚ Failure to consistently identify baseline measurements across all operations
- ✚ Failure to de-aggregate transportation vs. facility emissions
- ✚ No clear and transparent short term targets consistently set across all operations
- ✚ No clear and transparent long term targets and goals set across all operations
- ✚ Where short and long term goals and targets are set, there is no action plan or process made available for how these goals will be accomplished
- ✚ Inconsistent alignment between PO policy/targets and public policy and intended nationally determined contributions for emissions

## The Business Case for Sustainability: Closing the Loop

Many economists and business experts have recognized and written of the business case behind sustainable transitions. The negative effects of a capitalist economy on the environment have been well researched since the Industrial Revolution. But it is with the rise of globalization that this impact has become most pronounced. The demands on the logistics sector are changing, and the way we move people and goods will continue to change along with it.

Committing to the adoption of cleaner, more effective methods of distribution, embracing behaviours and technologies that enable buildings to operate more efficiently, designing for resiliency and independence in an industry that is vulnerable to climate-induced effects and developing more robust energy infrastructure will be essential to PO viability in the medium to long term.

These types of investments and changes in the postal sector have been proven to not only prevent harmful pollutants from entering the environment, but also to save companies who comply millions of dollars, and companies who innovate, millions more in avoided costs.

Postal operators that fail to recognize and plan for these eventualities or to take the necessary steps to adapt will be left behind at great financial strain – as is evidenced by the e-substitution boom and the shift from letter mail to parcels.

Cap and trade policies, carbon taxes, minimum standard efficiency regulations and other policy-backed mandates will continue to shift the way people and goods are moved. Reducing “*vulnerability to climate-related environmental and economic shocks*”<sup>201</sup> will be the key to reducing costs in the postal sector.

For logistics and delivery companies like UPS, FedEx and DHL and national postal services such as the United States Postal Service, Indian Postal Service, and China Post - countries who have the largest populations in the world - a collective effort could help reduce global GHG emissions and energy consumption on the scale needed to reduce global temperatures, build a competitive market for electric vehicles, develop the renewable energy industry, and change the way the world looks at distribution.

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<sup>201</sup> Porter, M.E. & Reinhardt, F.L. (2007, October). Grist: A Strategic Approach to Climate. Harvard Business Review. Retrieved from: [https://hbr.org/2007/10/climate-business\\_-\\_business-climate](https://hbr.org/2007/10/climate-business_-_business-climate)

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- 174 For a more detailed breakdown of how this industry average was obtained. See International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>
- 175 The IPC indicates the aggregated number of vehicles for all reporting POs as 652,000. The author has divided this by 20 – the number of EMMS members – to find the average.
- 176 Canada Post reports having 6,200 retail post offices, 41 processing plants and 485 letter carrier depots. The author added these together to find the number presented.
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- 182 The Australia Post 2016 Annual Report indicates Scope 2 emissions as: Electricity Grid. The author has made the assumption that these emissions are generated due to electricity for buildings and has applied them to emissions in this category.

- 183 From vehicle fleet and transport
- 184 The Australia Post 2016 Annual Report indicates Scope 1 emissions as: Natural Gas, LPG (All), Diesel including generation & Petrol. Scope 3 emissions include “subcontracted road transport”. The author has made the assumption that these are predominately from fleet operations and has applied them to the emissions in this category.
- 185 This includes subcontracted vehicles for delivery as reported in the 2016 Social Responsibility Report
- 186 Converted from 182,841,261 GGE (gallons gasoline equivalent)
- 187 Total overall electricity consumption from reporting POs was 7.96TWh
- 188 The 2016 Social Responsibility Report indicates the annual amount of electricity consumed is 1, 005, 331 GJ. The author has converted this to MWh for consistency purposes.
- 189 For a more detailed breakdown of how this industry average was obtained. See International Post Corporation. (2016). Postal Sector Sustainability Report 2016. Retrieved from: <https://www.ipc.be/en/knowledge-centre/sustainability/sustainability-report>
- 190 The IPC indicates the aggregated number of vehicles for all reporting POs as 652,000. The author has divided this by 20 – the number of EMMS members – to find the average.
- 191 Australia Post. (2015). United Nations Global Compact : Australian Postal Corporation 2015 Communication on Progress. Retrieved from : [https://auspost.com.au/content/dam/auspost\\_corp/media/documents/global-compact-report-2015.pdf](https://auspost.com.au/content/dam/auspost_corp/media/documents/global-compact-report-2015.pdf)
- 192 These are the main vehicles disclosed in the 2015 Carbon Disclosure Project report
- 193 Canada Post reports having 6,200 retail post offices, 41 processing plants and 485 letter carrier depots. The author added these together to find the number presented.
- 194 This number is an estimation based on the 2015 Postal Facts document released by USPS and retrieved from: <https://about.usps.com/who-we-are/postal-facts/postalfacts2015.pdf>. The most recent reporting year is 2014 and shows the year’s mailpiece breakdown as: total first-class mail volume = 63.6B and first-class single piece mail volume = 21.5B. The author added these two number to obtain a proxy value for 2016 where these numbers are not specifically reported.
- 195 Australia Post does not distinguish between residential and commercial clients. It identifies having 11.5 million “delivery points”. The author assumes this number includes both commercial and residential service areas.
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