

D3.5. A Postal Skills Strategy with "digigreen" practices to support the postal sector growth & resilience



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Executive Summary

The "DigiGreenPost Project" is dedicated to shaping the future of the postal sector by integrating innovative 'digigreen' practices that foster growth, sustainability, and resilience. This deliverable, titled "A Postal Skills Strategy with 'digigreen' practices to support the postal sector's growth & resilience," encapsulates a comprehensive approach to enhance the skills landscape within the postal industry while embracing eco-friendly initiatives. By combining digitalization and sustainability, this strategy aims to fortify the sector's competitiveness, modernize its operations, and align with the broader green transformation.

In response to the evolving landscape of the postal sector and the imperative to mitigate environmental impacts, the strategy emphasizes the cultivation of skills that harmonize with 'digigreen' principles. These principles entail leveraging digital technologies and green practices to optimize operations, reduce carbon footprint, and improve service quality. The following sections expound upon the strategy's key facets, encompassing best practices, policy recommendations, and valuable insights from various sources.

The DigiGreenPost project aims to bring resilience to the postal industry through the provision of upskilling for postal employees in green and digital competence areas, acting as an enabler towards the implementation of digital and green policy agendas, building the understanding of the importance of digital and green-related jobs throughout the sector. The project covers three key occupational areas of the postal sector: back-office operations, delivery operations, and post-office networks. The project also addresses the impact of the Covid-19 pandemic on the postal sector and the training methodologies.

This deliverable presents a new postal skills strategy, policy recommendations, and best practices to support the postal sector's growth and resilience in the face of digital and green transformation. The deliverable is based on the analysis of the skills needs, gaps, and challenges in each occupational area, as well as on feedback from stakeholders and experts. The deliverable also draws on the existing initiatives and frameworks at the European level, such as the European Skills Agenda, the European Green Deal, and the Digital Education Action Plan.

The main objectives of this deliverable are:

- To provide a comprehensive overview of the current and future skills needs and challenges in the postal sector, with a focus on digital and green competences;

- To identify and share best practices and recommendations for developing and implementing effective training programmes and curricula for postal employees;
- To propose policy recommendations at the EU level to support the postal sector in its digital and green transition, as well as to foster cooperation and dialogue among stakeholders.

Introduction

For centuries, the postal sector has been providing a unique and essential service to society. With 258 million delivery points across 53 countries and territories connecting business with 800 million customers every year, postal operators are an engine of economic growth and an essential driver of social inclusion and territorial cohesion in Europe. They employ over 2 million people, representing 1% of national GDPs and their widespread activities have spillover effects over multitude of other sectors. As key players in the economic and social life of all European countries, postal operators are also aware of their activity’s impact on the environment, and for decades now, have been investing and introducing operational changes in order to reduce their footprint.

When it comes to innovative and sustainable services, postal operators are at the forefront to implement eco-friendly, greener solutions to anticipate the ever-changing customer needs. Within a challenging economic, market and climate context, postal operators reaffirm their commitment to drive innovation towards ever-sustainable postal and delivery services, while striving to meet social goals and preserving economic value. Given the widespread physical presence of postal operators and the impact of their activities on the people and planet, this document focuses on the environmental, social and economic dimensions of the sector. When it comes to the environment, postal operators unceasingly strive to reduce their ecological footprint, while as the Universal Service providers and one of the largest employers across Europe, they take pride in their social responsibilities and commitments. Furthermore, postal services have an important role within the single market, contributing to the economy in the context of a fast-growing and ever-changing delivery industry.

The postal sector is a key contributor to the European economy and society, providing essential services to citizens, businesses, and public administrations. The sector employs around 1.8 million

people in Europe and generates an annual turnover of €89 billion. The sector also plays a vital role in connecting people and regions, promoting social inclusion, and supporting e-commerce.

However, the postal sector is also facing significant challenges and opportunities due to the rapid changes in technology, customer expectations, market conditions, and environmental issues. Digitization has led to a decline in traditional mail volumes, but also to an increase in e-commerce parcels and new digital services. Green transition has become a priority for addressing climate change and reducing environmental impact, but also for creating new business opportunities and enhancing customer satisfaction. Covid-19 pandemic has posed unprecedented health and safety risks for postal workers and customers, but also highlighted the resilience and adaptability of the sector.

These changes require new skills and competences for postal employees, as well as new ways of learning and working. The DigiGreenPost project aims to address these needs by developing a transnational ecosystem for digigreen skilled postal employees, two new skills curricula, pilot delivery of trainings, a dual recognition scheme in the postal sector, as well as dissemination and exploitation activities. The project involves 12 partners and 1 associated partner from 6 countries (Greece, Belgium, Germany, Ireland, Romania, Croatia), representing postal operators, VET providers, higher education institutions, research institutes, certification bodies, social partners, and umbrella organizations.

The purpose of this deliverable is to present a new postal skills strategy with “digigreen” practices to support the postal sector’s growth and resilience. The deliverable is structured as follows:

- Chapter 1 describes the sustainability in the postal sector as well as how the postal sector can reach climate neutrality.
- Chapter 2 describes the Postal Strategy at EU Level from a field perspective to support the green and digital transition and how to build resilience in the sector.
- Chapter 3 describes the Postal Strategy at EU Level from a VET perspective to support the green and digital transition and how to build resilience in the sector.
- Chapter 4 provides an overview of the best practices and recommendations for developing ‘digigreen’ skills in each occupational area (back-office operations, delivery operations, post-office networks), based on the analysis of skills needs, gaps, challenges, existing initiatives, stakeholder feedback, and expert input.

- Chapter 5 proposes policy recommendations at the EU level to support the postal sector in its digital and green transition, as well as to foster cooperation and dialogue among stakeholders. The recommendations are aligned with the relevant EU policies and frameworks.
- Chapter 6 concludes with a summary of the main findings and suggestions for future work.

The postal sector stands at a pivotal juncture, marked by the convergence of technological innovation and environmental consciousness. As digitalization reshapes the way communication and logistics operate, sustainability has emerged as a critical concern for both industry players and policymakers. The "DigiGreenPost Project" recognizes this intersection and endeavors to pioneer a transformative shift in how postal services are approached.

This deliverable embarks on a journey to introduce a novel postal skills strategy that capitalizes on the symbiosis of digital and green practices. By fostering a workforce equipped with the competencies to navigate this evolving landscape, the strategy aims to rejuvenate the sector's capabilities and secure its relevance in an era of rapid change. Through strategic upskilling and reskilling initiatives, the workforce will be empowered to embrace digital tools, streamline processes, and incorporate sustainable methodologies into their daily operations.

The subsequent sections delve into the multifaceted dimensions of this strategy, spanning from best practices and recommendations garnered from industry exemplars to policy insights at the EU level. These insights collectively illuminate the pathway towards an agile, competitive, and ecologically conscious postal sector.

In conclusion, the "A Postal Skills Strategy with 'digigreen' practices to support the postal sector's growth & resilience" deliverable serves as a compass for postal industry stakeholders, policymakers, and educators. It envisions a future where the convergence of digitalization and sustainability is harnessed to not only fortify the sector's growth but also to uphold its responsibilities towards the environment. This strategy reimagines the postal sector as a proactive agent of positive change, embracing innovation while treading lightly on the planet.

1. Sustainability in the Postal Sector

Sustainability, defined as meeting present demands without jeopardizing future generations' ability to meet their own, is a hot topic in the twenty-first century. The concept of sustainability, which is built on three pillars: economic, environmental, and social, is equally relevant for postal companies. Many postal firms consider sustainability to be a key aspect of their development strategy. Today, postal firms' strategic development objectives include not just environmental concerns, but also sustainable human resource management. Employee health and safety, decent work, training, and development are critical components of postal companies' long-term development¹.

With the launch of the EU Green Deal and the initiatives under the Fit for 55 packages, the European Union has accelerated the adoption of regulation to move forward with climate challenge. Well ahead of this green wave, postal operators, aware of the impact of delivery services on the environment, had already engaged to place sustainability at the core of their action and have begun to take measures that go beyond the EU objectives.

Ambition for reaching climate neutrality

In general, postal operators already have well-defined sustainable policies in place and exchange good practices with other peers to encourage a wider implementation within the sector. These policies, at the core of postal activities cover aspects related to climate change, mobility, resource efficiency and sustainable products and services over the whole value chain. A key commitment is the reduction of greenhouse gases (GHG) emissions. Postal operators have demonstrated their pledge to significantly cut down GHG emissions by undertaking ambitious fleet transformations towards sustainable mobility alternatives and redesigning their processes in pursuit of greater resource efficiency, among others. Thus, a vast majority of operators already have emission reduction targets in place and in addition, a few are already carbon neutral while some other operators aim at becoming carbon neutral in the medium-term.

Postal operators are continuously accounting and monitoring GHG emissions as well as coming up with innovative ways to lower them. Despite the shift from lighter-weight items to heavier items and

¹ Employee Satisfaction and Loyalty as a Part of Sustainable Human Resource Management in Postal Sector. In SUSTAINABILITY Volume: 11 Issue: 17. DOI: 10.3390/su11174591

the increase of e-commerce parcels volumes, postal operators have heavily invested and successfully managed their operations to keep GHG emissions stable and in some cases even decreasing over the recent years. Greening deliveries through transport decarbonization In terms of sustainable mobility, Postal operators are implementing plans to decarbonize their fleets, by transitioning towards the use of alternative fuel vehicles (i.e., electric vehicles, gas, hydrogen) in addition to reducing their energy consumption. In this sense, the number of alternative vehicles has increased in recent years, and nowadays operators have more than 30,000 electric vehicles, and over 58,000 vehicles powered with alternative fuels. With 170,000 postal employees delivering on foot throughout Europe, over 89,000 delivering by bike and the outstanding increase of electric bikes used for the last mile (more than 25,000), postal operators are a unique example of zero-emissions delivery within Europe. Despite members’ investments to implement low and zero-emissions transport by using alternative technologies, both alternative energy supplies and charging infrastructure are essential to make such an ambitious transition viable. Across Europe, postal operators are making efforts, in line with their circumstances and resources, to achieve their environmental goals. These are a few examples of such initiatives:

- In the Netherlands, PostNL has developed an emissions reduction plan that aligns environmental and financial reporting by introducing carbon costs in capex procedures, emissions reduction goals in the annual strategic plan and incentives for senior management to reach those objectives.
- In 2019, Pošta Slovenije Group formulated its Energy Efficiency Sustainable Development Strategy, setting concrete objectives for 2025 and focusing in four main areas: buildings, transportation, waste management and water consumption.
- Posten (Norway) has set goals according to Science Based Targets (SBTi), a framework that verifies that reduction targets are aligned with the speed and level needed to meet the targets in the Paris Agreement.
- Austrian Post (Österreichische Post) is committed to replace its motorized delivery fleet with electric or alternative vehicles by 2030. The Austrian designated operator in charge of the Universal Service Obligation (USO) is already quite advanced in the deployment of renewable means of transport, being the largest e-fleet operator in Austria.

Seeking a more eco-efficient and circular postal sector

When it comes to energy consumption, up to 77% of electricity used by postal operators is from renewable energy. Moreover, almost 60% of postal operators already use renewable self-consumption sources to some extent, representing around 33% of the total energy consumed. In addition, reduction of energy use in buildings is intended to be achieved through a wide variety of measures including efficient lighting, replacement of equipment and awareness programs to employees.

Moreover, Postal operators are also implementing circular economy models. Accordingly, they apply circularity principles such as repurposing, reusing, recycling and waste management in their processes, as well as in the materials used (packaging, paper, plastics, vehicles and electric equipment). Furthermore, they foster and improve their reverse logistics solutions to efficiently reduce and manage waste. Postal operators are working towards a zero-waste strategy, with measures such as introducing reusable packaging or reducing paper consumption, among others.

- An Post (Ireland) has successfully reduced its packing waste by making its products reusable, recyclable or compostable. For example, An Post pre-paid credit cards are bio-degradable and pre-paid posting bags and boxes are made from 100% recycled material.

Offering sustainable products and services to customers

All postal operators with sustainability policies in place have set specific targets for sustainable products and services. Many postal operators are offering zero emission or carbon neutral products, and most operators are voluntarily offsetting their carbon emissions. They continue to implement further measures and innovative solutions to reduce emissions from deliveries, such as offering customers the option to schedule their deliveries and thus significantly reducing missed delivery attempts. Optimizing delivery routes as well as the pooling rate of vehicles are also key measures to increase delivery efficiency and at the same time, help improve air quality. In the same vein, the use of parcel lockers has increased, with the number of lockers from Members growing by 30% between 2018 and 2020. While offering customers an additional delivery alternative, parcel lockers can also be useful for operators to reduce failed delivery attempts and km travelled, and their associated emissions (BOLDRON, 2010).

Improvements aimed at decreasing CO₂ emissions have therefore been put in place both for home and out-of-home deliveries as complementary ways to deliver parcels offering the customers a larger scope of greener delivery solutions. In order to further reduce emissions, it is essential to allow customers to make informed choices based on the understanding of emissions generated by the different delivery modes. All the commitments and data mentioned in this section prove the support and commitment of Postal Operators towards the EU Green Deal and the 2030 UN Sustainable Development Goals. Indeed, Postal Operators are fully aligned with the EU objectives of achieving a 55% reduction of GHG by 2030 and to become climate-neutral by mid-century. Citizens can therefore trust that postal operators are going the extra mile to provide the services most respectful with the climate and the environment possible.

The 2030 Agenda for Sustainable Development, which was endorsed by all UN Member States in 2015, presents a shared roadmap for peace and prosperity for people and the planet today and in the future. The 17 Sustainable Development Goals (SDGs) are at the heart of it, and they represent an urgent call to action by all countries, developed and developing, in a global partnership. They know that eradicating poverty and other deprivations must be combined with initiatives to promote health and education, decrease inequality, and stimulate economic growth – all while addressing climate change and striving to protect our oceans and forests.

In the sphere of global corporate sustainability, the postal sector has a prominent position and several innovations. The industry is regarded as a pioneer in carbon management due to the effectiveness of the Environmental Measurement and Monitoring System (EMMS). The stakeholders' message, however, is clear: in order to maintain this position, the program must expand and match its program aims with the UN Sustainable Development aims (SDG).

The International Postal Union's Environmental Measurement and Monitoring System (EMMS) program is a sector-wide project aimed at reducing the postal industry's contribution to global warming. It takes a team effort to reduce carbon emissions and improve carbon management. In 2008, the EMMS initiative was created in response to stakeholder and CEO requests for the postal sector to reduce its carbon footprint.

This was due to worries over the sector's contribution to greenhouse gas emissions. The EMMS program is a global endeavor with 19 participants from Africa, Asia-Pacific, Europe, and North America: An Post (Ireland), Australian Postal Corp (Australia), Austrian Post (Austria), BPost (Belgium), Correos (Spain), CTT Portugal Post (Portugal), Deutsche Post DHL Group (Germany), Le Groupe La

Poste (France), New Zealand Post Group (New Zealand), POST Luxembourg (Luxembourg), Poste Italiane (Italy), Posten (Norway), Posti (Finland), PostNL (The Netherlands), PostNord (Denmark & Sweden), Royal Mail Group (United Kingdom), South African Post Office (South Africa), Swiss Post (Switzerland), United States Postal Service (United States).

Following a pilot in 2008, the original EMMS targets were established in 2009. In comparison to the 2008 baseline, the program's original 20 participants set lofty aims to be met by 2020:

- Reduce total carbon emissions from own operations by 20% - accomplished in 2014.
- Achieved a carbon management proficiency score of at least 90% in 2018.

Both goals were met before the 2020 deadline. Six years ahead of plan, the business met its carbon emissions target in 2014. In 2018, the group's yearly Scope 1 and 2 emissions were 27% lower than in 2008. Participants agreed on a delivery efficiency target, which included assessing the carbon emissions connected with each delivery and broadening the scope to include outsourced transportation:

- To achieve a 20% reduction in Scope 1, 2, and 3 carbon emissions per letter mail and parcel (from own operations and outsourced transit) by 2025, compared to a 2013 baseline year.

Environmental Measurement and Management System (EMMS)

Since the EMMS program was launched in 2008, the global sustainability agenda has expanded dramatically. The Paris Agreement and the establishment of the UN Sustainable Development Goals (SDGs) revealed a desire for international cooperation². Following 10 years of reporting on carbon emissions and carbon management, the organization is now launching the program's next phase, the Sustainability Monitoring and Measurement System (SMMS). As a result, several postal firms have already developed strategies and begun working on topics that support the SDGs' goals. Stakeholders and participants collaborated to identify the five SDGs most relevant to the postal sector:

- SDG 8 focuses on decent work and economic prosperity.
- SDG 9 focuses on industry, innovation, and infrastructure.
- SDG 11 - Sustainable Cities and Communities

² Sustainable Development Goals. In: <https://sustainabledevelopment.un.org/sdgs>

- SDG 12 - Consumption and production that is responsible
- SDG 13 - Climate action

Each SDG has a number of sub-targets. The participants agreed on seven operational areas for their future program to focus on:

- ***Health and safety***

Decent work and economic growth (SDG 8)

- ***Learning and development***

Decent work and economic growth (SDG 8)

- ***Resource efficiency***

Industry, innovation and infrastructure (SDG 9)

- ***Climate change***

Climate action (SDG 13)

- ***Air quality***

Sustainable cities and communities (SDG 11)

- ***Circular economy***

Sustainable cities and communities (SDG 11)

- ***Sustainable procurement***

Responsible consumption and production (SDG 12).

2. Postal Strategy at EU Level

Postal Operators are committed to offering a sustainable, efficient and innovative postal service across the EU and beyond to support a stronger and more competitive EU economy³. Postal Operators are investing in the development of alternative services, innovative new features and the promotion of efficient delivery of postal items in order to meet evolving social, environmental and economic challenges. By providing sustainable employment and reducing our ecological footprint the operators are confident to create solutions that meet their customers’ needs both today and in the future. Postal Operators want to collaborate with European policy makers and all stakeholders in the 2019-24 legislative period and drive progress across three priority areas:

1. Facilitating the Single Market

- a. Universal service should remain the starting point for legislation on postal services – offering flexibility and both economic and financial sustainability;
- b. Good collaboration among the different European Commission Directorates General is key to coherent policy making – and will deliver legal certainty.

2. Promoting Digital Europe

- a. There is no need for further regulation of the parcel delivery market;
- b. Data Protection rules should be interpreted in a harmonized way throughout the EU – the Posts are a trusted partner and derogations to GDPR are justified;
- c. More flexible implementation of the Customs changes for 2021 – a coherent approach, simplified to aid implementation.

3. Supporting Sustainability

- a. Count on postal operators to contribute to the Sustainable Development Goals – including resource efficiency, procurement and waste management and air quality.

³ <https://www.posteurop.org/manifesto-assets/Manifesto-PostEurop.pdf>

Facilitating the Single Market

Postal Operators are an engine of economic growth in the single market. They promote social inclusion by connecting different regions, consumers and producers, institutions and citizens. The Posts are trusted across Europe and are an essential factor for the EU economy – from rural areas through to sub-urban and urban areas.

Since the single market for postal services was fully opened to competition in 2013, Postal Operators have driven significant efficiencies throughout the sector. They have fulfilled their universal service mission and delivered a high-quality offering across the EU with innovative solutions that meet the needs of individuals, companies and all postal users.

Universal Service should remain the starting point for legislation on postal services

Universal Service lies at the core of the postal legislative framework and Postal Operators believe it should remain the focus of legislation. There is no need for further sector-specific regulation. There is other legislation to regulate issues which impact the postal sector - including employment, customs, taxation, consumer rights, data protection, platforms and competition rules.

Universal service should be based on user needs and national market developments. National practices and demands are a strong influence on European postal markets and these specific circumstances can only be fully addressed through greater subsidiarity. Postal Operators call for a flexible regulatory framework. There is no ‘one-size-fits-all’ universal service obligation (USO) and providers need the ability to introduce innovative delivery solutions and provide services adapted to changing customer needs.

Posts operate in a fragile ecosystem with ongoing structural decline in letters and fierce competition in parcels. Policy makers should carefully balance the encouragement of competition with the sustainability of the USO. A declining market is less attractive to new players. With universal service providers already weakened by the decline in the letter market, promoting competition will not create a level playing field and would be at the expense of the universal service providers and the sustainability of the service.

The USO should respect the principle of economic sustainability, how universal service is funded is important. Where USO revenues do not or cannot cover the cost of the service, public resources should refund the universal service provider.

Coherent policy making to create legal certainty

Postal Operators need strong coordination among the European Commission Directorates General to ensure legal consistency between EU regulations. They are impacted simultaneously by EU policy across a host of areas including Customs, Aviation Security, VAT, Public Procurement, Trade, Communications Networks, Content and Technology, Labor and Consumer regulation, and Competition Rules. New legislative proposals in these fields should be made with due consideration to the consequences and interactions with other EU legislation.

Promoting Digital Europe

Postal operators are a cornerstone of the fast-growing e-commerce industry and a crucial pillar of the EU’s Digital Single Market. The EU acknowledged our sector’s contribution in its recent study⁴ which stated “*dynamic growth in cross-border e-commerce was mainly facilitated by (...) the investments of parcel carriers*” as the supply of domestic and cross-border delivery services has broadly improved over the past decade.

E-commerce unlocks the potential for retailers, consumers and the whole EU economy. Postal Operators are enhancing the integration of their local logistics, developing more flexible and visible cross-border parcel delivery services and improving customer tools and tracking services. Most webshops are SMEs and Postal Operators have launched initiatives providing customized services to support their success and even extend their businesses across national borders. As e-commerce expands so does the growing efficiency of postal operators, alongside emerging innovative solutions to meet user needs, makes parcel services increasingly affordable.

There is no need for further regulation of the parcel delivery market

E-commerce delivery does not need further regulation. It works well as it is, and Postal Operators should rely on market forces to provide the best solution. In line with the principle that regulatory intervention is only justified in situations of identifiable market failure, and since no market failure has been determined, there is no justification for further European regulation of the cross-border parcel delivery market. More regulation would have an adverse impact on reactivity and innovation. The

⁴ WIK study “Development of cross-border e-commerce through Parcel delivery” for the European Commission

parcel delivery sector is extremely competitive with high pressure on prices and a constant drive for innovation. The rise of e-commerce and cross-border shopping has been made possible due to the significant involvement of delivery operators. Postal Operators invested widely to seize the opportunity: increasing processing capabilities, developing up-to-date IT systems and offering customers new services and innovative solutions.

Data protection rules should be interpreted in a harmonized way

Europe’s Posts have been trusted with the safe and secure transfer of information for centuries. Posts collect, process, transmit and store large amounts of data on the sender, the receiver and the postal items themselves – including electronic data. This data is sent to destination countries – including non-EU markets.

Postal Operators generally handle data to comply with legal requirements such as customs clearance and security needs; for operational efficiency – e.g., sorting, transportation and optimizing delivery rounds; or to offer customer-oriented services, like keeping people informed of their deliveries and facilitating timely communications.

Data protection rules - whether general, like the General Data Protection Regulation (GDPR), or specific to the electronic communication sector - have a significant impact on Posts. National Data Protection Authorities understand and interpret them differently, which presents the Posts with challenges in interpreting and implementing the new EU data requirements.

Today’s cross-border postal services can only be assured if the European Economic Area (EEA) postal operators can rely on derogations set out under Article 49 of the GDPR. The aims of both the GDPR and Postal Operators may be better served if the postal sector is able to develop sector-specific safeguards – such as a Code of Conduct, Certification mechanism, and standard data protection and contractual clauses.

Flexible implementation of the Customs changes

Several pieces of customs and taxation legislation entered into force in 2021 implying deep changes for postal operators. They contribute to the strengthening of the EU internal market and postal operators are mobilizing significant resources at both European and national level in order to manage their successful implementation.

The Universal Postal Union (UPU) is implementing an ambitious “Electronic Advance Data Roadmap” to generalize the global exchange of electronic messages on item data between posts. It has recently

changed its regulations and as of 1 January 2021, ITMATT⁵ messages are compulsory for all items containing goods. It is also developing capacity-building programs for the global postal community – especially in developing countries. To ensure success in these efforts, the Postal Operators urge the European Commission to:

- Pay particular attention to the global coherence of the different projects;
- Clarify the link between the Union Customs Code provisions making electronic data exchanges compulsory and the General Data Protection Regulation that tends to limit these data exchanges, sharing the clarification with national data protection authorities;
- Provide clarity on the IT system availability at EU and Member State level;
- Explore the possibility of additional customs simplifications that would make implementation simpler – particularly in relation to duties and tax collection.

Supporting sustainability

Postal Operators are committed to environmental sustainability – including delivering the UN Sustainable Development Goals.

Postal Operators met their commitment to reduce Industry CO₂ emissions by 20% six years ahead of schedule. The Posts signed up for the 2020 commitment in 2008 and they achieved it by 2014 thanks to the Environmental Measurement and Monitoring System (EMMS) set up with the support of the industry partner, International Post Corporation (IPC). Since 2008 the EMMS programme has saved 15 million tons of carbon emissions⁶, reduced emissions by 29.7%, participants have saved 1.7 billion euros in fuel and electricity costs.

The programme scope has not broadened to include outsourced transport and the aim is to deliver a 20% carbon emissions reduction per letter mail and per parcel by 2025, from a 2013 baseline year.

⁵ Implementation of ITMATT: ITeM ATtributed pre-advice; ITMATT messages are the electronic representation of the customs declaration, equivalent to paper forms CN 22/CN 23/CP 72. An ITMATT message is sent by the origin post to the destination post and includes for each item all information from the paper form.

⁶ Find more information under: <https://www.ipc.be/sector-data/sustainability/overview>

3. What VET can offer to a postal Strategy oriented to the green and digital transition

The importance of Vocational Education and Training (VET) in helping people develop the skills and competencies needed to meet the demands of the labor market is more and more recognized. This acknowledgment results from the understanding that workforce skills play a critical role in economic growth, productivity, and innovation. VET can support the reskilling and upskilling of the sector, understanding the needs of the market and the gaps between the market and education. VET can support this transition by developing specialized courses, giving instruction, and supporting trainers, educators, and HR officers who are incorporated into the industry. In order to equip the workforce with skills that directly meet the changing needs of the labor market, collaboration is essential. The postal workforce will be well-prepared for the industry's green and digital transition thanks to the VET sector's ability to create programs that fill in skill gaps particular to the postal sector, provide people with real-world experience, and enable access to innovative technology training. By fostering a workforce that is creative and adaptive, this relationship helps the postal industry remain competitive and sustainable in the face of today's fast changing world. It also smoothly connects with the goals of the postal plan.

Specific actions that can be implemented in the VET sector:

- **Design Training Curricula targeting the Skills-specific needs of the market**

A strategic approach to creating a highly skilled and dynamic workforce in line with the sector's green and digital transition is collaboration between the postal business and the VET sector. As part of this collaboration, carefully crafted curriculum that are suited to the particular requirements of the industry are designed. The procedure comprises a thorough examination of the particular knowledge domains and skill sets that are in great demand due to the shift to environmentally friendly and technologically sophisticated postal services.

These specialized courses could address a wide range of relevant topics, such as the upkeep of electric vehicles, the incorporation of renewable energy technologies, the skillful application of data analytics, the mastery of digital marketing strategies, and the vital area of cybersecurity. VET curriculum make sure that the workforce is not just ready but incredibly well-equipped to handle the ever-changing

demands of the postal business by emphasizing these varied skill sets. This kind of strategic collaboration foresees the needs of the industry and successfully shapes a labor force that can prosper in a world where digital transformation and sustainability are critical. Consequently, the postal sector is poised to acquire a distinct advantage and long-term viability amongst a constantly changing marketplace. Knowledge, skills, attitudes that compose the competences needed for this transition have to be carefully taken into consideration and addressed through these curricula and should be addressed in all levels of staff ranging from high level managers to frontline employees. This comprehensive approach is motivated by the knowledge that a staff with a variety of skills and competencies is necessary for the postal strategy to be executed successfully. Trainings should involve hands on activities with immersive educational programs where individuals will learn in experiential, interactive and practical ways. Such programs will support the effective buildup of competences, developing the work based skills and will create a better understanding on the active engagement.

Higher management and leadership levels

The VET framework's curriculum should be designed to provide senior executives with advanced management and decision-making abilities as well as a thorough awareness of the dynamic changes in the market. In particular, these training courses ought to cover the importance of adopting digital and green practices in a strategic manner, how to allocate resources for sustainability projects in an efficient manner, and how to seamlessly incorporate digital technology into postal plans as a whole. Curricula in this level, should target the adaptation of the decision makers' mindset towards the needs of the green and digital transition.

Horizontally to all staff members

Concurrently, VET should work towards the improvement of training initiatives for all employees, regardless of their position within the postal industry. Every employee, from sorting center and delivery crew to customer service agents and administrative staff, have a crucial role in the postal industry and cannot be excluded from the strategy of the transition. This strategy guarantees that each member of the team has the necessary knowledge of sustainability, green logistics expertise, and digital literacy to effectively contribute to the transformation of the postal industry.

- **Raising Quality Standards in VET**

Constant consultations between the VET sector and stakeholders from the postal market will support the development of an effective and relevant education. Raising Quality standards in VET involves

systematic improvements in designing, delivering and assessing the competences offered by each curricula. Moreover, to ensure that graduates are ready for the demands of the job market, VET institutions should collaborate with industry stakeholders, promote best practices, and implement ongoing quality assurance processes. Such processes will foster a skilled and adaptable workforce and will contribute to the overall growth of the sector enhancing innovation across the sectors. Raising quality standards in the sector will not only underline the current needs of the workforce but at the same time will anticipate future requirements, ensuring that VET sector will remain a dynamic and responsive education system that listens to the needs of the market and the society.

- **Leading Transformation**

This is a critical strategic imperative that works as a response to the dynamic and evolving landscape of education and market requirements. VET is playing an important role in emerging industry trends and anticipating the skills, knowledge, attitudes that are required both in the current but also in the future markets and adapt their programs accordingly. Leading transformations, is about having a culture of continuous improvement, adaptability and changes while foreseeing the future. Today, companies are facing changes in terms of technology, competition, interests, customers and market demands. Whether, the change is relatively small, such changing procedures, or relatively large as interrogating new strategies will be only implemented when the ecosystem in general and key players specifically, will agree on that changes. Leading transformation is designed for those who lead. Within the postal ecosystem leading roles have not only the decision makers but also middle managers. Improving staff comprehension and obtaining their backing for essential modifications are essential to the accomplishment of any revolutionary endeavor. Employees are more inclined to welcome and actively engage in the transition when they understand why changes are happening and how they fit into the organization's goals. This promotes a more upbeat and cooperative work environment in addition to lowering resistance to change.

It is equally important to invest in enhancing the skills and self-assurance of transformational leaders. The success of the change process can be greatly influenced by the ability of these executives to effectively guide the organization through it. With the right guidance and assistance, they can make well-informed decisions, effectively convey changes, and motivate employees to thrive in the new work environment.

Lastly, leading towards transformation means to develop assessing and evaluating strategies that can make of a high use the lessons learnt, best practice identification as well as to enhance collective

experience in of executing the change. These competences empower the organization to stay agile and responsive in the evolving landscape of the sector.

- **Promote emerging key competencies for a more stable employability of the workforce**

Vocational Training addresses all competencies and skillsets that can strengthen the employability of it graduates or of currently employed professionals through continuing education and training. The last few years and the DigiGreenPost project itself stand as key examples of this trend: providing opportunities to upskill and reskill the working population to better meet the future needs of the job market. VET offers a coherent approach towards the integrated adoption of Competencies Framework into the basic skills requirements of its professionals, thus meeting the above-mentioned objective above (increasing Quality of VET) as well as training a modern working population. Examples include not only those Frameworks that are directly referred to by the project activities, and thus contemplated by the Project Results (e.g., DigComp⁷ and GreenComp⁸ in their latest versions) but also other key Framework such as EntreComp⁹ for entrepreneurial skills as well as LifeComp¹⁰: The European framework for the personal, social and learning to learn key competence. Cooperation between training institutions and staff together with professionals of the postal sector can activate this virtuous cycle of progressively adopting job profiles that will necessarily require the utilization of such key competencies as described in the Frameworks.

- **Promote opportunities for renewal of training methodologies in all their forms (school-based or work-based).**

The introduction of new knowledge through innovative curricula in the postal sector is a key initiative that can spark great waves of innovation throughout the sector as well as ensure the strength of its working population by equipping it with the knowledge of the future job market. However, knowledge is only one component. The current trend is that of reimagining education through disruptive tools – may they be technological support or soft ones, like teaching and training methodologies. Firstly, we are now used to an educational process that takes advantage of digital tools in most of their forms: starting from more common laptops to online synchronous collaboration, real-time messaging, or workspace¹¹, reaching more disruptive fields such as Generative Artificial Intelligence or deep learning

⁷ [DigComp Framework \(europa.eu\)](http://europa.eu)

⁸ [GreenComp: the European sustainability competence framework \(europa.eu\)](http://europa.eu)

⁹ [EntreComp: The entrepreneurship competence framework \(europa.eu\)](http://europa.eu)

¹⁰ [LifeComp \(europa.eu\)](http://europa.eu)

¹¹ [What is the future of work? | McKinsey](https://www.mckinsey.com)

technologies (e.g., preparation of curricula, redaction of notes, preparation of presentations etc.). Secondly, we need to take into account that the introduction of such tools on both ends of the spectrum (training institutions and postal sector offices at all levels) will require a complete reinvention of how the learners and the professional interact with the technologies. At the training institution level, trainers are currently developing new training methodologies that can make the best out of the support digital tools can offer: self-paced learning, more interaction sparked by immersive simulations and so forth. At the same time, the learning institution is not the only place where the learning experience takes place. In fact, the postal sector offer in itself internal pathways for professional growth: it is thus important that such pathways are exposed to the revolution VET institutions are experiencing in order to contaminate the learning process on both ends. An interesting opportunity, which goes beyond this objective, is that of stimulating public-private partnerships in the sector. As already an ongoing trend in the sector¹², it is possible to ream even more benefits by fostering this type of cooperation by putting VET institutions at the center of this process thanks to processes of training innovation it is experiencing as above. PPP would be in the position to create easy to manage partnerships between actors that are both exposed to new technologies and practices while benefiting from one another’s experiences.

- **Promoting transferability of competencies and mobility of professionals across Europe**

Education and training provide the appropriate platform to facilitate the mobility of professionals across different countries and companies’ landscapes. Facilitated by umbrella organizations, such as PostEurop and EVBB, the mobility of learners and, in the case of continuing training, professionals, can greatly improve the working experience of specific employees’ targets across the postal sector. The VET ecosystem in its wider sense, bringing together training institutions, facilitators and mobilities managers e.g., companies and accelerators of mobilities, in line with the policy discussions and framework that established the recognition of learning experiences abroad (recognition of credits through European credit system for vocational education and training (ECVET¹³), high-quality mechanism to implement quality assurance and monitoring of VET processes – such as EQAVET, and other well-known tools such as Europass certificates). This patrimony of tools can be transferred and applied to the training of individuals that are already employed in the postal sector, where longer terms of employment are common, to stimulate further professional and human growth of the human

¹² [guideToPublicPrivatePartnershipsForEServicesInThePostalSectorEn.pdf \(upu.int\)](#)

¹³ [European credit system for vocational education and training \(ECVET\) | CEDEFOP \(europa.eu\)](#)

resource. In addition, the learning mobility per se can represent a key experience in the training and redemption of human resources, a notorious challenge that many employers face nowadays: beyond the mobility component, the benefits in terms of competence acquisition are very positive for the worker. The exposure to different working arrangements, offices and colleagues will influence the positive development of key competencies such as those mentioned above (entrepreneurial, but of course also key transversal skills for an international working environment); arguably even more precious, this can spark a process of competencies transfer than can be beneficial for the professional undergoing mobility, as the learning experience will be much more facilitated and natural. In a postal industry that is inevitably interconnected across its different national systems, transfer of competencies will facilitate the process of harmonized growth of the European postal sector as well as strengthen the sense of commitment and belonging to this industry of the millions of employees across the continent.

To sum up, VET sector is playing an important role in the green and digital transition. VET sector has an important role in shaping the workforce of the future, serving as an essential component of the transformation puzzle. The postal industry is kept flexible, competitive, and ready for the opportunities and challenges posed by the constantly changing landscape of digital and green practices by VET education, which develops, reskills, and upskills employees and key players in the sector.

4. Best Practices and Recommendations

Employees of postal firms have been actively involved in attaining the sustainability targets outlined in various postal operators' sustainability policies. Employee engagement in these activities is



Figure 1 Employee engagement of postal operators in the SMMS program

skyrocketing (Figure 1). They are trained, participate in sustainability projects, and raise awareness about sustainability.

The postal sector is a people-led and labor-intensive industry, employing around 2 million workers across all Postal operators. According to a survey to 25 European operators that account for almost 1,1 million employees, employment has remained relatively stable in the last years, with a small decline of 1,1% between 2018 and 2020. The management of such a number of employees requires extensive planning and organization from operators to maintain sustainable and quality jobs. This is particularly relevant in the ongoing transformation process taking place in the sector, where a motivated, well-trained and adaptable workforce is more needed than ever to respond to the major challenges faced by the sector: the increase of competition, the opening of new markets and the diversification of activities.

A well-trained workforce to address new skills' challenges

A key aspect to support the ongoing evolutions in the sector is the training of employees. Over the last years, postal operators have promoted the development of skills through various programmes aimed at enhancing their employability. Life- long learning is particularly pertinent for a postal workforce that needs to adapt to the ongoing transformation the postal sector is going through, especially in an increasingly digitalized world and dynamic market reality; this requires employees to develop new technical and soft skills. One of the main drivers to support change and the delivery of quality postal services in answer to evolving customers' needs is a trained, adaptable and motivated workforce. As a result, Postal operators have launched a myriad of initiatives looking to increase the competences and capacities of employees, such as training, re- training, upskilling, internal and external mobility, coaching, mentoring and leadership schemes at different stages of their professional lives.

Postal operators regard the knowledge of their employees as a valuable resource to foster and to treasure. The following are some examples of initiatives carried out in this regard:

- Swiss Post has introduced the Kaizen methodology, a knowledge development and transfer system for improving and optimizing operational processes. Over 7,000 employees have been trained, and around 5,000 ideas are gathered every year.

- CTT Portugal Post has created an Academy for Young Talent Development as an innovative, transformational and market-oriented development center which aims to boost in its young employees the competencies of the future, preparing them to leading roles and bigger responsibilities.

A healthy workforce

Postal operators are aware of the responsibility they hold to provide the best health and safety conditions to their employees. While it is essential to ensure business continuity and limit incidence due to illness or injury, a well-designed workplace positively impacts the individual health of employees. As a result, Postal operators have put in place several actions aimed at reinforcing the health and wellbeing of its workforce. This has become notably important during the Covid pandemic crisis.

- During the hardest times of the pandemic Deutsche Post created a phone and email hotline for employees to deal with the stress and other psychological pathologies derived from those difficult times.

Diversity as flagship

According to the latest available data (2020), almost 40% of the employees of Postal operators are above 50 years old, while the average age is slightly above 45 years. The implementation of health measures and training on digital tools are precisely two important aspects to keep senior employees active. Their experience is an invaluable asset for postal operators, which need to provide senior workers with the tools and skills that allow them to adapt and embrace the transformation of the sector. Postal operators equally support the diversity, gender equality and nondiscrimination of their employees, providing access to job posts regardless of the age, gender, disability or origin of the applicants, among other factors. Regarding gender inclusion, women represent half of the employees (50%). Besides, as major employers in most European countries, they are committed to reflect a diverse workforce. In conclusion, Postal Operator’s social objectives for the upcoming years consist of maintaining the high level of responsibility towards employees and continuing to tackle the transformation challenges faced by the sector by adapting the training and safety measures to its

diverse workforce. Postal operators acknowledge that partnership and dialogue between the social partners at all levels is important to exchange on, follow-up and support these social evolutions.

Deutsche Post DHL Group (DPDHL)

Deutsche Post DHL Group sees itself as a pioneer in climate-neutral logistics. DPDHL were the first logistics company to set measurable environmental and climate protection goals in 2008. This milestone motivated DPDHL to go even farther and establish their Mission 2050: by then, DPDHL hopes to have reduced their carbon emissions to zero. The first stage of this strategy is to meet their 2025 aim of increasing their carbon efficiency by 50% above 2007 levels. To do so, DPDHL will need to do more than just improve efficiency and modernize their fleets. DPDHL must also be a leading force in the shift away from fossil fuels and toward clean alternative fuels.

Electricity is already a critical resource in local and short-distance transportation. DPDHL now uses over 10,000 StreetScooters - an electric vehicle DPDHL designed - to deliver and collect up parcels in Germany, and they will soon become increasingly ubiquitous on other European roadways. To reduce local air pollution, DPDHL is increasingly adopting cargo bikes and e-scooters in metropolitan areas. Nonetheless, over 80% of their transportation involves long-distance goods using heavy-duty trucks. Right now, the commercial usage of electric motor systems for long-distance transportation is unthinkable. The same holds true for passenger transit. If DPDHL wants to achieve climate-neutral transportation, there is no way around developing sustainable fuels.

Deutsche Post DHL Group (DPDHL) has established a training program for its approximately 500,000 employees in order to expedite cultural change and support the firm's objective of being a zero-emissions logistics company by 2050. The goal of the "Mission 2050" program is to educate employees on the overall context of climate change, to comprehend the Group's climate protection plan, and to actively contribute to meeting the target. Fortunately, progress in carbon-neutral fuels has advanced in recent years, and a diverse range of potentially sustainable fuels is now available. DPDHL has a plethora of potentially sustainable fuels at their disposal. These range from well-known alternatives such as biofuels and hydrogen to lesser-known alternatives such as synthetic fuels. Each of these options has advantages and disadvantages. Each presents its own set of obstacles. Unfortunately, no single fuel or technology stands out as the apparent solution; the right substitute has yet to be discovered.

The ultimate goal for businesses is to find the sweet spot between environmental performance, commercial viability, and operational feasibility. The essential needs are a steady supply of fuel at affordable procurement costs, a well-functioning infrastructure, and a large network of filling stations. DPDHL must also cooperate much more collaboratively across national boundaries and industry sectors. In a globalized society, international compatibility is a vital success component.

For many years, DPDHL have advocated for the development of alternative energy. Deutsche Post DHL Group is a founding member of the aireg e. V. initiative, which promotes the use of renewable aviation fuels, as well as the fuel initiative Global Alliance Powerfuels. As a big fleet operator, DPDHL has gathered vast experience with a variety of fuels and technologies, both in testing and in live operations.

E-vehicles powered by batteries emit no pollutants and are extremely silent. They help to improve urban air quality and minimize noise disruption for local residents. Because of its efficiency and robustness, the comparatively expensive purchase price of this mode of transportation is countered by low maintenance and operation costs. However, in the logistics industry, battery-powered vehicles continue to lag behind vehicles powered by conventional internal combustion engines. The primary reasons why e-mobility is now limited to short-haul shipments and deliveries in metropolitan areas are short ranges, long charging times, an inadequate national charging infrastructure, and limited payloads.

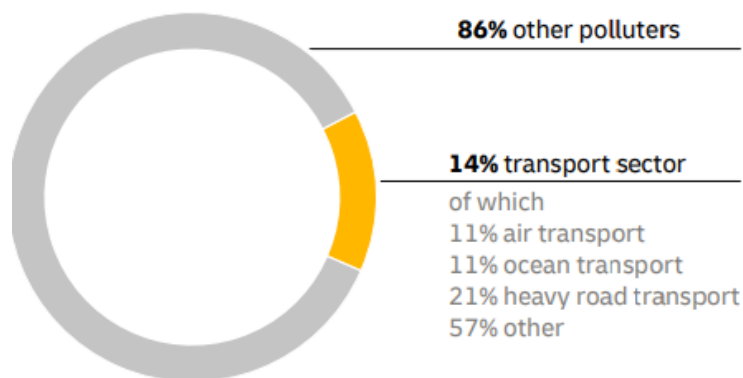


Figure 2 Global greenhouse gas emissions

Heavy and long-distance transportation contributes significantly to greenhouse gas emissions. The primary hurdles in this sector are the development of higher performance batteries and the expansion of cross-border charging infrastructure.

Sustainable e-mobility

E-mobility can only be described as environmentally sound and sustainable if conventional electricity is substituted with green electricity for battery drives. Finding a need-based technique to store green

electricity based on sun and wind is one of the primary problems brought by the transition to renewable energy. As a result, it is safe to conclude that there will be no large-scale power systems capable of supplying green electricity to e-vehicles between now and 2050. Other measures to reduce greenhouse gas emissions will be required until the transportation industry can become totally electrified. Modern, low-emission, fuel-efficient freight aircraft, in particular, can only make a minor contribution to cutting emissions. This is why DPDHL believes that developing and improving sustainable fuels such as biofuels (if generated responsibly) and e-fuels (electricity-based fuels or power fuels) is critical.

Alternative or Sustainable

Today, the phrase "alternative" refers to all fuels that are not classified as fossil fuels, such as diesel, gasoline, heavy oil, and kerosene. Alternative fuels include liquefied natural gas (LNG) and compressed natural gas (CNG). However, they are still derived from fossil fuels, making them unsustainable. True sustainable fuels are derived from renewable sources, have no negative environmental impact when used, and do not emit greenhouse gases. Until it is possible to fully electrify the transportation industry, DPDHL will require tangible interim solutions that can suit the needs of the various forms of transportation. Several initiatives have been started in order to identify alternatives to fossil fuels. Because this effort is still in its early stages, a universal solution has yet to emerge. There is currently no single coordinating agency for sustainable fuel research, development, and testing, nor is there a common information base. Both would be required to create a legally binding norm. When it comes to investing in technology, economic considerations are usually at the forefront.

The creation of new technologies and the modification of old ones necessitates long-term investments, the long-term rewards of which are not always clear. The variety of sustainable fuels adds to the complexity and hampers efforts to conduct focused research. Some fuels necessitate the use of novel motors and driving systems. Others, such as replacing seals, require no or only modest changes to the technology or infrastructure involved. An immediate alliance of worldwide, cross-industry measures is required. This group might then create a master plan that would purposefully incorporate a variety of measures and investments.

The world of renewable fuels

Sustainable fuels range from simple, common biofuel mixes like E10 to breakthrough solar fuels made entirely of water, air, and sunlight. The most promising sustainable fuels are divided into three categories:

- Biofuels
- E-fuels (electricity-based fuels or power fuels)
- Solar fuels

Biofuels and e-fuels, which can replace fossil fuels like diesel, gasoline, and kerosene, have the greatest promise for true sustainability. CO₂ is taken from the air or other sustainable sources are employed in the creation of these fuels. In this way, the carbon cycle is closed and the emissions from burning are offset.

Real-world Uses

Alternative fuels are already being employed in a variety of corporate applications, notably at Deutsche Post DHL Group. DPDHL believes that battery-powered e-vehicles like their StreetScooter are the best solution to enhance urban air quality and reduce their short-term carbon footprint. DPDHL is testing other fuels such as LNG and CNG while waiting for direct electrification to become an economically viable option for vehicles.

The StreetScooter, a self-developed e-vehicle, is the showpiece of their alternative road transportation fleet. DPDHL currently has 10,000 StreetScooters on the road in Germany and other European nations. DPDHL is aggressively working in Asia to replace traditional motor scooters with e-scooters. DPDHL is also growing the usage of City Hub solutions in Europe, where vans are being replaced, among other things, by battery-powered cargo bikes.

Putting the e-highway to the test

Heavy shipments for distances of more than 400 kilometers can be electrified using pantograph-equipped overhead-line hybrid trucks, avoiding the acknowledged disadvantages of e-mobility caused by expensive, heavy batteries. The underlying technology is far more efficient than liquid or gaseous fuels, and it has the potential to significantly reduce air pollution. Commercial vehicles that are

compatible can be outfitted with battery, hydrogen, or diesel hybrid propulsion systems. Sweden's first e-highway launched in 2016. Germany launched its first significant three-year trial on the A5 autobahn between Frankfurt and Darmstadt in May 2019. Specially outfitted diesel-hybrid trucks may charge their batteries through overhead lines in both directions over the 5-kilometer span. Two additional experiments are being planned for northern and southern Germany. DPDHL is sure that this is a viable choice. It may someday play an important part in e-mobility.

As a transition technology, natural gas

Trucks with LNG/CNG driving systems are a viable alternative to traditional diesel vehicles. Sustainable biomethane or e-methane could be used depending on availability. In 2018, Deutsche Post DHL Group expanded its fleet in Belgium by adding their heavy-duty vehicles with a total allowed weight of 40 tons and LNG propulsion systems. In March 2019, the first LNG heavy truck outfitted with a mega trailer was deployed in Germany, which had previously been impossible due to tank design constraints. In Sweden, two large vehicles powered by bioLNG are set to join the drop-in biodiesel fleet in 2020. The Swedish government has agreed to fund the acquisition of six additional cars through 2023.

Hydrogen power in heavy transport

DPDHL joined the H2-Share project, which is sponsored by the European Regional Development Fund, together with other logistics companies from Germany, Belgium, and the Netherlands. Every enterprise interested in the project drove a 27-tonne, zero-emission hydrogen truck for three months in the beginning of 2020. Given the environmental benefits, DPDHL supported the initiative to investigate, develop, and test this truck technology. DPDHL feels that fuel-cell range extenders that can augment e-battery power are a more practical application of hydrogen that might help BEV vans and e-trucks extend their ranges. DPDHL ordered 100 new hydrogen-powered StreetScooters with a gross vehicle weight of 4.25 tons, an additional fuel cell, and a range of up to 500 kilometers in May 2019. DPDHL is the first logistics company to deploy a big number of electric cars equipped with fuel cells for last-mile deliveries. The Ministry of Transport and Digital Infrastructure (BMVI) of Germany provided financial assistance for their purchase.

E-fuels closer to industrial manufacturing

DPDHL is sponsoring the first large-scale manufacturing of Power-to-Liquid (PtL) fuels in Germany as part of the GreenPower2Jet initiative. A group of companies and research institutions intends to develop a PtL facility near Hamburg. The plant would then supply synthetic hydrocarbons to a refinery in Lingen, where they would be converted into carbon-neutral aircraft fuel. The process's byproducts can subsequently be used to create green diesel for use in heavy-duty vehicles and ships. The initiative began as a proposal in the German Ministry of Economic Affairs and Energy's (BMWi) idea competition "Regulatory Sandboxes for the Energy Transition." Even without ministry assistance, the consortium is convinced that it can continue to push GreenPower2Jet production.

Best Practices on Digital and Green Skills showcased during the DigiGreenPost Project – 2nd Training Mission at Deutsche Post DHL Group:

1. **Certified GoGreen Specialists** – DPDHL Group intends to train 80% of its workers as Certified GoGreen Specialists by 2025. The program is modular in order to accommodate various roles, working environments, and knowledge levels. The foundation module is the same for everyone; it transmits basic climate change knowledge, the Group's climate protection policy, the Group-wide climate protection program GoGreen, and tangible measures that everyone can take to decrease their carbon footprint. There are extra, advanced modules for various divisions and functions that teach employees how to be more carbon efficient in their roles. The Group's aim for the educational employee program is to create a GoGreen Specialist culture in which employees are inspired to adopt a GoGreen attitude and are capable of contributing to the achievement of Mission 2050.
2. **Exoskeletons** – The trend of Exoskeletons involves wearable devices built to support or enhance human physical capabilities. While passive exoskeletons absorb energy from movements and relinquish power when support is needed, active devices are externally powered and can sense and react to specific movements of the human body. The



Figure 3 Deutsche Post DHL Group Exoskeletons

technology is understood to positively impact employee health and safety.

3. **Extended Reality** – The trend of Extended Reality, otherwise known as XR, encompasses the different experiential technology genres of augmented reality (AR), virtual reality (VR), and mixed reality (MR). AR enriches the physical world with purely visual digital screens or overlays in the right place at the right time; VR is a fully immersive digital experience requiring special headsets; and MR is at the intersection of both, infusing interactive virtual content within the physical world.
4. **Computer Vision** – The trend of Computer Vision utilizes cameras to capture photos or videos and applies artificial intelligence (AI) algorithms to analyse data extracted from this digital imagery. Rudimentary visual AI systems are trained to simply differentiate objects from each other, while more advanced versions can track objects across viewpoints and learn on their own. The Computer Vision trend is set to highly impact logistics in the coming years. Its technology will underpin and drive future logistics, enabling more efficient processes as well as sustainable and safe operations.
5. **Indoor Mobile Robots** – The trend of Indoor Mobile Robots encompasses the several types of portable robot that fulfil tasks primarily inside facilities without direct input from human operators. Automated guided vehicles (AGVs) follow predetermined visible or invisible paths, while their next-generation successors, autonomous mobile robots (AMRs), use real-time path planning and can more freely move around obstacles. Today, DPDHL is seeing more and more applications for indoor mobile robots in logistics. Especially in markets with higher labour costs, indoor mobile robots are being used extensively in order fulfilment. In other areas such as automated mobile manipulation however, the technology is not yet widely marketable and will take a few more years to achieve commercialization on an industry-wide level. As soon as indoor mobile robots can be deployed at a scale, they have enormous potential to reduce cost and increase efficiency within operations. Therefore, this trend is considered highly impactful for the logistics industry.
6. **DHL’s high performing robots: Locus AMRs** – In e-commerce and supply chain logistics, the repetitive process of order picking is not easy to automate. Today’s e-fulfilment centres cover enormous spaces and store millions of items. Solutions that boost picking efficiency and reduce the physical toll on



Figure 4 Deutsche Post DHL Group Indoor Mobile Robots

employees are essential. They help supply chain companies like DHL optimize operations, create healthy working environments, and gain a competitive advantage. Assisted picking robots like Locus AMRs represent a breakthrough in efficiency. Robotic picking can increase the number of items picked per hour by up to 180%. The pandemic has brought an e-commerce boom in its wake, and customer demands for product availability and delivery time are high. An efficiency increase of this magnitude is a big win for e-commerce businesses and order fulfilment services.

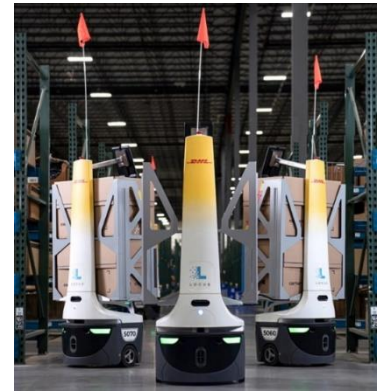


Figure 5 Deutsche Post DHL Group Locus AMRs

- Smart Labels** – The trend of Smart Labels refers to the use of printed paper, plastic, or fabric labels upgraded with special intelligent inlay technology that can digitally capture and communicate more information than is printed on the physical label. Technologies generally integrated in these labels include radio frequency identification (RFID), near-field communication (NFC), time-temperature indicators (TTIs), and quick response (QR) codes. Within logistics and the supply chain, smart label usage has significant impact. Nowadays DPDHL sees an increase in the adoption of these technologies to address various aspects of the customer experience and operational efficiency. From the availability of product information through the simple scanning of a QR code to being able to track a parcel or package along its journey to its delivery address, this trend appears on the Logistics Trend Radar with a relatively high impact and realization within 5 years.



Figure 6 Deutsche Post DHL Group Smart Labels

- Next-Generation Packaging** – The trend of Next-Generation Packaging refers to the evolving changes in materials used for primary, secondary, and tertiary packaging as well as the technology added to this packaging. These materials and new technology enable packaging to sense and react to environmental changes and to changes in the packaged contents. This trend also incorporates elements of sustainability, incorporating new packaging materials that are more bio-based, recyclable, reusable, and biodegradable. From the continued boom and rise of e-commerce to the global drive for sustainability, the need is growing for creative and cost-efficient packaging solutions with a heavy focus on the reduction of CO2 footprints. In order to meet customer demand, there is keen focus on recyclability, reusability, composability, and biodegradability and a rising demand for antimicrobial packaging, package traceability, and condition-monitored packaging. It is increasingly important for logistics providers to meet these needs. Propelled by population growth, technological developments,

and changing consumer expectations about product packaging, the global packaging market has seen rapid growth in recent years.

9. **Bio-Based Materials** – The trend of Bio-Based Materials encompasses all materials produced exclusively from substances derived from traditional sustainable biomass, as well as modern bio-synthetic processes. This trend focuses on the beginning rather than the end of the product life cycle and so it includes both biodegradable and non-biodegradable materials. With consumers and corporations paying increased attention to sustainability in recent years, and as expectations rise and demands increase, logistics organizations are seeking to eliminate from daily operations materials seen as unsustainable and to reduce waste. Bio-based materials are identified as carbon- and waste-reducing solutions that can be integrated into sustainability strategies. A wide range of potential applications for the use of bio-based materials exists in various supply chain segments, from building construction to packaging.
10. **Environmental Stewardship** – The trend of Environmental Stewardship refers to major behavioural changes at collective and individual levels across industries, governments, and societies to minimize environmental degradation and maximize protection. Conscious individual choices and changed daily habits, paired with environmental targets, and certified programs, demonstrate the shift towards sustainable living choices and methods of working.
11. **Digital Marketplaces** – The trend of Digital Marketplaces incorporates digital brokerage platforms that match demand for products and services with available supply. These platforms give suppliers and customers access to a greater market while also offering them comprehensive transparency and additional services. Customers value the ease of comparing shipping options and pricing in a digital logistics marketplace. Due to growing demand for online logistics marketplaces, logistics providers have expanded their offerings in recent years and new, specialized marketplaces have emerged. For example, companies can now access available logistics labour during peak seasons. Many of these digital platforms are becoming more versatile thanks to increased usage and deeper data analysis, increasing transparency, and creating a better customer experience. Digital marketplaces are having a significant impact on the logistics industry, especially because of increasingly complex supply chain networks and countless options of logistics services and providers. These marketplaces take transparency to a new level.

Poste Italiane

Poste Italiane empowers people with sustainable insights. In 2017, Poste Italiane's corporate Mobility Management team published an e-book titled *Perché muoversi in modo sostenibile?* (i.e., *Why should we choose sustainable mobility?*). This e-book highlights a number of best practices and economic benefits associated with more ecologically friendly lifestyles, with the goal of increasing awareness and supporting sustainable mobility among Poste Italiane employees. The e-book is free, and colleagues are urged to share these insights with their communities, so empowering a larger number of people to adopt more sustainable mobility choices. The e-book's second edition is scheduled to be released in 2018. This information sharing builds on Poste Italiane's 150-year heritage and links its reputation with progress, innovation, and community caring. Poste Italiane has launched the 'Poste Pedala' (Post & Ride) campaign to encourage not only bicycle commuting for employees at its Rome headquarters, but also the usage of bicycles in urban mobility. Using an existing mobility gateway on the company's intranet site, the program encourages sustainable mobility. The webpage is linked to a smartphone app that calculates distance traveled and ranks participants, fostering friendly competition. The effort is expected to save around 54.1 tons of CO2 emissions each year.

Digital Education project – *Free contents for citizens, customers and employees delivered through live webinars and online multimedia products*

Poste Italiane has developed the Digital Education project to enhance the digital skills of customers and employees. The webinars' content is wide: from an overview of possibilities offered from digital technologies to tools useful to become a digital citizen and interact with PA, to awareness in using of social media, in sharing data and in cybersecurity. They are customized from level basic to advanced and professional. The basic level is even available with Italian sign language (LIS) and subtitles. Some topics:

- Advanced level: fintech, public digital identity (SPID), fake news, open banking, PSD2, IOT, AI, digital loans
- Business programme: digital payments, cybersecurity, advertising and social media. The aim is to offer tools to digitalize and growth business of small companies and self-employed workers.

- Website (podcast, video, infographic, game): password, search engine, hacker, digital signature, phishing, ethical behavior, reputation, ecommerce, GDPR, copyright, advertising. The project started in 2020 and developed online multimedia in 2021 with new topics monthly.

The 129 webinars have brought in over 60,000 subscribers with recurring followers. The website gets over 12,000 clicks per month. In terms of communication, there have been over 93 social media posts, over 300 press releases and articles, and over 13,000 responses to surveys.

Posti (Finland)

Posti, as one of Finland's largest employers, may have a beneficial impact on the local sustainability agenda and serve as an example to others. Posti, being a huge corporation, plays an essential role in supporting ecologically responsible logistics. The company's goal is to cut emissions by 30% by 2020. In the autumn of 2018, Posti collaborated with the Helsinki Environmental Services Authority (HSY) to organize "Climate workout," a climate-themed training week. Throughout the week, staff got straightforward and motivating guidance on climate-friendly everyday activities including mobility, food, living, and consumption via various digital platforms. Employees from around the organization took part in the training both in-person and remotely at Posti's headquarters. Throughout the week, staff learned about electric and gas cars, renewable fuels, and had the opportunity to test Posti's electric scooters and bikes. In the entrance hall, there is also a small pop-up shop selling bicycle equipment. The training week was attended by around 2,000 Posti employees.

PostNord

PostNord is one of the Nordic region's greatest employers, with over 30,000 people, and plays an important part in vital social activities in the region. PostNord strives to provide an appealing and exciting workplace, to increase employee engagement, and to protect staff health. The corporation also aims for gender equality, with a long-term goal of having 40% of managerial roles filled by women. The PostNord Driver Academy initiative is a collaboration between the Swedish Public Employment Service and the Swedish Agency for Economic and Regional Growth. The project's goal is to create a paradigm for reaching self-sufficiency in drivers while also providing secure work for underserved communities. The Academy seeks long-term unemployed individuals as well as recent arrivals. Women are a specific group that the company is attempting to recruit. In parallel, the corporation is

investing in Lingio, an app-based Swedish language school developed in collaboration with trainee drivers. The course focuses on the language used in transportation and logistics, and it is designed to help both newcomers and native speakers improve their language skills. Lingio will soon be made available to other businesses throughout the country. The Driver Academy debuted in Rebro in October 2018, initially teaching 13 drivers. The scheme is being expanded to ten additional places across Sweden. In September 2019, eight students completed their driving instruction in Ume, while 11 new drivers began their training in Sundsvall later that autumn.

BPost (Belgium)

BPost signed an innovative €300 million revolving credit facility (RCF) deal in October 2017 with a variable interest rate that reflects the organization's sustainability performance. The loan, which is the first of its kind in Belgium, is designed in such a way that there is a link between BPost's sustainability score (as determined by an independent third party) and the loan's interest rate. As a result, BPost is encouraged to improve its sustainability performance in order to lower the interest rate. BPost's sustainability objective is further integrated in the organization's operations and ethos by utilizing this flexible financing tool. Based on stakeholder feedback and a materiality analysis, BPost has developed its broader Corporate Social Responsibility (CSR) strategy and its potential impact on the sustainability score around three primary pillars:

- People: cares about its employees and engages them in a sustainable manner;
- Planet: strives to lessen its environmental impact;
- Proximity: engages with the community it serves.

The goal is to create shared value in the following areas: business continuity, employee happiness and engagement, and customer satisfaction (Figure 7).

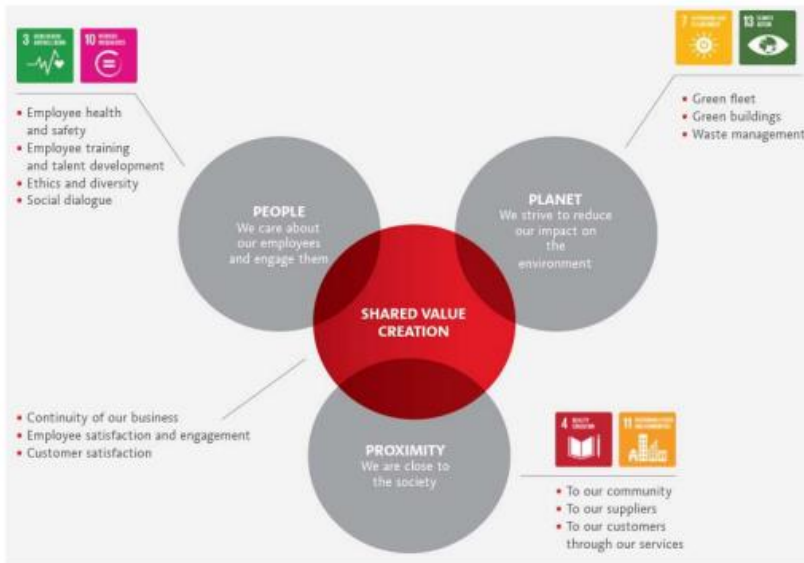


Figure 7 Integrating CSR and implementing innovative programs such as RCF into BPost's company operations and culture

BPost, Belgium's main postal service, plays an important role in society and tries to be a trustworthy organization. Embedding its CSR strategy and introducing innovative programs like the RCF into its company operations and culture will help it achieve its goal of exhibiting sustainability leadership and achieving sustainable growth.

Double-Deck Trailers – Reduction of truck journeys by 30% with double-deck trailers



Figure 8 bpost Double-Deck Trailers

Parcel volumes are increasing every year, demanding a well-considered general strategy to control the impact of these activities on the environment and on transport infrastructure.

Double-deck trailers are one of BPost group's tangible responses, part of a suite of sustainable solutions to support its constant growth. Standing four meters high, these double-deck trailers have two 1.8m decks across a standard length of 13.60m. Every of them can accommodate 70 wheeled containers, compared with the 44 the current large trailers can convey. That is a 60% hike in capacity.

BPost group plans to purchase more than 320 double-deck trailers by 2030 and up to 550 more in the following 20 years, a first in the parcels sector in Belgium. This will enable BPost to reduce its truck fleet, helping relieve congestion on Belgium’s roads. This reduces the number of trucks on roads and highways. Thus, there are 30% less journeys and kilometers travelled with double-deck trailers.

CULT “Collaborative Urban Logistics & Transport in Antwerp” – *Seven large companies decided to combine their deliveries of orders to retail outlets and individuals in the city of Antwerp*

With the idea of reducing the kilometrage and emissions of urban deliveries in the city of Antwerp, 7 companies launched the "CULT" partnership. BPost was selected to smartly bundle their parcels and pallets and then deliver them completely emission-free to retail outlets and individuals in the city. The positive impact on mobility and the environment will increase as more companies join CULT for their goods’ flows. Companies - even competing players - can cooperate transparently and fully in line with existing regulations and the structure is easily transferable to other cities. This project is fully in line with the "Ecozone" philosophy of sustainable, innovative urban distribution whereby BPost combines emission-free delivery in several Belgian cities, with an extensive network of collection points and lockers. RESULTS AND IMPACT This resulted in a 25% reduction in kilometers driven and a 90% reduction in emissions through combined deliveries in the city of Antwerp.

An Post (Ireland)

An Post intends to increase the usage of electric vehicles in its fleet as part of its commitment to reduce carbon emissions. The Irish postal operator is replacing all of its diesel cars in the six major Irish cities (Dublin, Kilkenny, Waterford, Cork, Limerick, and Galway) with electric vehicles, effectively providing zero emission parcel delivery and ecommerce services. An Post has set the goal of being Europe's greenest postal service by 2030, and it is the first postal service in the world to receive ISO50001 accreditation for its full operations. It presently delivers 2 million pieces of mail using a road fleet of approximately 2,800 vehicles and 1,600 bicycles and will replace 750 diesel vehicles with electric vehicles over the next four years (Figure 9).



Figure 9 An Post deploying electric automobiles to reduce pollution

An Post's Green Hub

Their first green consumer offer is available since August 2020. The Green Hub's initial phase focuses on the home retrofit market, providing consumers with a trustworthy destination to get information



on home energy upgrades as well as purchasing an electric vehicle with the help of low-interest Green Finance alternatives. Customers can visit the Green Hub via the An Post website or any of the country's 900+ Post Offices. An Post's Green Hub offers two options for residents considering a home renovation project:

The One Stop Shop - provides an end-to-end project solution to remove the bother out of home energy upgrades;

Figure 10 An Post Green Hub

The DIY - an alternative for customers who want to manage the project entirely themselves, including grant application fulfillment.

For consumers who prefer a hassle-free experience, the One Stop Shop solution, in collaboration with SSE Airtricity, handles every step of the home redesign process. SSE Airtricity will manage each project from start to finish for the customer, with market-leading financing available through An Post Money Green Loans and a streamlined SEAI grant application procedure. Consumers can access an innovative interactive BERWOW Energy Retrofit Calculator via the Green Hub website, which provides a clear first look at potential energy efficiency measures and estimated costs of the work for their specific home, based on their Eircode or current Building Energy Rating (BER).

An Post Money's green finance solutions include a Green Home Improvement Loan, which allows you to borrow up to €75,000 over 10 years with an APR as low as 4.9% on loans over €20,000. Customers can also get a low-interest Green Electric Car Loan. All An Post employees or Postmasters can also take advantage of a Green Hub staff offer, which is a 10% discount on their home energy improvement when they use their hassle-free One Stop Shop service in collaboration with SSE Airtricity.

To commemorate the introduction of An Post's The Green Hub, they provided one lucky An Post family with the opportunity to convert their dream 'green' home into a reality and add value to their home through a staff competition. To enter their competition, employees were required to submit a short film describing the challenges in their house - drafts, inadequate insulation, boiler or damp concerns - as well as why their family should win. The winning home received energy efficiency modifications costing €25,000. To raise awareness of the Green Hub, a national marketing campaign was launched across important media channels. TV and outdoor advertising, digital and social media, public relations, and in-store display kits were used at over 300 Post Offices around the country.

Even with some activity suspended during Covid-19 lockout stages, the Green Hub has exceeded objectives in terms of raising customer awareness and creating interest. The Green Hub was also backed by Eamon Ryan TD, Minister for Climate Action, Communication Networks, and Transport, who praised An Post's Green Hub and the innovative new One Stop Shop offering in collaboration with SSE Airtricity.

With the Green Hub, a one-stop shop for greener living at the heart of communities around the country, An Post will continue to bring sustainable living into the mainstream. An Post has enormous plans to develop the Green Hub by introducing additional, relevant services for people to live a more sustainable life, building on their unrivaled trusted brand, statewide retail base, and tight government

contacts. An Post will continue to work toward becoming Ireland's "go-to" site for greener living, partnering with prominent suppliers in the sustainable living field through 2021.

Groupe La Poste (France)

In collaboration with the Caisse des Dépôts, La Poste aspires to remain the leader in digital trust by translating its data-ethics policy into a competitive advantage and so setting the groundwork for a French digital sovereignty hub. By 2025, all postal workers will have received digital training via an e-learning module. The company is also focusing on accelerating its own digital transformation by instilling a digital culture among its personnel. By 2025, 100% of postal workers will have received digital training via an e-learning module; their 40,000 managers and sales staff will be trained in the use of artificial intelligence for professional tasks, and 5,000 postal workers will be trained to become data experts.

La Poste will expand its Laposte.fr website for its clients, which is presently visited by 25 million unique users every month. La Poste will become a benchmark open platform for all types of transmissions in the future. It will provide everything a private or commercial customer needs to send their dispatches and will be linked to La Poste's partners' and customers' platforms. By 2025, 100% of postal products and services for both individual and business clients will be digitized and available over the Internet.

MOVIVOLT

La Poste Groupe has launched its new subsidiary "MOVIVOLT" which aims to accelerate the deployment of electric vehicles for professional fleets. This service answers a double challenge. It aims to provide operational support to companies and local authorities in adapting to Low Emission Zones, which are areas in city centers where the circulation of the most polluting vehicles is or will be progressively limited. It supports the accelerated deployment of alternative mobility throughout the country. MOVIVOLT benefits from the know-how of La Poste, which has 15 years of expertise in electric mobility and owns the first fleet of company electric vehicles, and of the Banque des Territoires, a pioneer in financing of Sustainable Mobility. It enables La Poste to develop a new service supporting sustainability while offering new revenues. MOVIVOLT wants to propose an alternative at a reasonable cost, supporting and amplifying the positive impact on the environment. It's a complete

offer based on three pillars: an end-to-end support, a wide choice of vehicles adapted to financial or distance needs and a digital application. Besides the vehicles themselves, MOVIVOLT therefore also offers its clients advisory support and know-how on the use of electric vehicles. Movivolt offers all customers a simple and efficient customer service with a single contact for all vehicle-related services. It offers a large selection of multi-brand cars and vans to meet all needs.

Effibot

Sustainability and innovation go hand in hand with Groupe La Poste. France's postal provider has created innovative technological delivery options such as a remote-controlled drone and the Effibot, an automated mail cart. In March 2017, this automated mail cart was tested in three cities across five delivery rounds with five different mail carriers. This autonomous cart, equipped with sensors and capable of carrying up to 150 kg of gifts and messages, assists the Postman/Postwoman during his/her delivery round, stopping when they stop, avoiding barriers, and carefully avoiding pedestrians. Because the Effibot is powered by an electric battery, it emits no noise or local pollution. The DPDgroup drone (Figure 11) has been in operation since 2016 and is fully automated, with an average speed of 30 km/h, a payload of 3 kg, and a range of 20 km. The DPDgroup drone facilitates deliveries in secluded or difficult-to-access places, as well as deliveries in emergency scenarios, such as medicine delivery. These environmentally friendly solutions are not only safer for employees but also more efficient for clients. They are among the new and creative technologies that can assist in bringing environmental advantages while also improving working conditions for people.



Figure 11 The DPD group drone facilitates delivery in remote or difficult-to-reach regions

Best Practices on Digital and Green Skills showcased during the DigiGreenPost Project – 1st Training Mission at Groupe La Poste:

- **La Poste CSR Strategy with a focus on employees’ engagement** – The presentation focused on the organization's CSR strategy, with a specific emphasis on employee engagement. The presentation aimed to provide a comprehensive understanding of the company's CSR approach, shedding light on key focal areas and initiatives undertaken to embed sustainable practices and social responsibility. The primary objective was to underscore the pivotal role employees play in catalyzing positive transformation and fostering a culture of active engagement within the organization.

- **CSR Trainings in Mail, Parcels and Services BU** – The primary focus of this activity was to present and discuss the Corporate Social Responsibility (CSR) Policy of the services mail and parcels Business unit. The presentation centered around four main pillars, each representing a crucial aspect of the company's commitment to sustainability and social responsibility:
 - Accelerating Ecological Transition: This involved adopting environmentally friendly practices, reducing carbon footprints, and promoting sustainable solutions throughout its operations. The aim was to play a part in combatting climate change and fostering a greener future for all.
 - Promoting Ethical and Sustainable Consumption in the Digital Sector: The company sought to integrate responsible business practices within the digital sector, encouraging customers to make conscientious choices while using its services. This included promoting eco-friendly packaging, minimizing electronic waste, and ensuring that the digital infrastructure was inclusive and accessible to all.
 - Contributing to the Development and Cohesion of Territories: This involved engaging in community development initiatives, supporting local businesses, and fostering economic and social cohesion within the territories it serves. By being an active contributor to the growth and well-being of communities, the company aimed to create a lasting positive influence.
 - Employee Development and Social Inclusion: This encompassed providing training and opportunities for skill development, enhancing employees' knowledge and understanding of sustainability principles, and fostering a diverse and inclusive work environment. Through these efforts, the company aimed to empower its employees and create a workplace that reflects the value of social responsibility.

- Climate Fresk** – This initiative has been developed by a Non-Governmental Organization (NGO) and adopted by La Poste France to serve as an awareness training tool for all its employees. As part of the implementation, a select group of employees has been trained to become trainers themselves. So far, 6,000 employees have successfully completed the training. The overarching objective is to extend this training to a much larger scale, with the aim of having a total of 50,000 employees complete it. The training seeks to raise awareness and understanding among La Poste's workforce regarding important social or environmental issues, fostering a more responsible and conscious corporate culture. By empowering employees to become change agents and reaching a broader audience, the organization strives to make a meaningful and widespread impact on sustainability and societal well-being. The main purpose of this activity is to explain how the company has used an interactive game in order to educate and engage the staff to understand the causes and consequences of climate change and how to take action. The Climate Fresk workshop consists of 4 parts/ steps:



Figure 12 Climate Fresk

- Think: discovering the relationships,
 - Create: expressiveness, personalization and cohesiveness,
 - Recap: sharing and anchoring knowledge
 - Debrief: expressing emotions, discussion and sharing ideas for actions.
- The CléA Numérique programme: supporting employees' digital skills** – Participants had the opportunity to gain a comprehensive and practical understanding of essential digital skills crucial for today's professional landscape and how this topic is addressed in the field of training the postal employees. The program is a personalized learning path, participants master digital tools, information management, collaborative project skills, and fundamental digital security principles. The program's innovative approach ensures adaptability to rapidly evolving technology and fosters a culture of continuous learning. The program also offers certification which is also an important topic or the employees empowering them to enhanced career prospects, improved efficiency in their roles, and a competitive edge in an increasingly digital-driven world. This program is characterized as a best practice example and for that reason it was shared with the participants.

- **Exchanging programs between post offices** – This best practice was an Erasmus+ mobility project which gave the opportunity to 14 postmen to participate in an exchange program. Taking place in Switzerland from January 15 to 27, 2023, the project immersed these apprentices in a novel professional and cultural environment. They engaged in various aspects of the postman's role, fostering an exchange of logistics practices while identifying both similarities and differences in the field. Beyond professional aspirations, the activity nurtured a broader understanding of diverse cultures, personal growth, autonomy, teamwork, and community living. The apprentices participated in visits to Swiss Post's training and sorting centers, practical training sessions, and collaborated with Swiss counterparts in parcel and mail distribution. Notably, cultural enrichment was woven into the experience through trips to the Olympic Museum and an ice hockey game, enhancing their overall learning journey.
- **Pedagogical Program and the AI Data School** – Through this best practice, participants attained a heightened awareness of the dynamic digital landscape and the pivotal role that digital skills hold in shaping both individual and collective accomplishments. Moreover, this session fostered skill enhancement by illuminating the significance of fundamental digital practices, paving the way for attendees to explore pathways for nurturing digital autonomy and honing expertise in realms like data utilization and artificial intelligence. In a broader context, participants will also grasp the profound impact of cultivating digital literacy, recognizing how it leads to inclusivity, personal empowerment, and heightened prospects for professional advancement.

Hrvatska Posta (Croatia)

Croatian Post works with the environmental organization "Green Feet" to conserve the environment and Croatia's natural beauty. The organization "Green Feet" plays an important role in environmental preservation by removing unlawful landfills and dumping sites from Croatia's national and natural parks. Croatian Post and its postal employees recognized the significance of these efforts and have been actively involved in the association's activity for the past eight years. Postal workers from the city of Samobor help the association's work by directly participating in cleaning efforts.

Their initiatives have aided in the cleanup of landfills in their community. Croatian Post chose to contribute even more to this effort by printing a commemorative postcard, which was handed to all postal employees and could be purchased at the nearest post office by Croatian people. Any automotive damage can be documented and posted on the postcard so that "Green Feet" members can remove it. The postmen notify "Green Feet" about new car wreckage areas on a regular basis and have significantly helped to environmental preservation and protection throughout Croatia. "Green Feet" has retrieved over 16,000 pieces of automotive wreckage from national and natural parks. Many of them have been identified and removed by Croatian postal workers. Croatian Post's effort contributes to increased public awareness and education about the problem of unlawful dumping in nature.

Furthermore, In order to improve the digital competences of employees, educational content has been created on the basis of computer and internet use, work in MS Windows, various MS Office programs and the topic of IT security. Educational materials are set up on the eLearning System to make them available to all employees. Additionally, education about IT tools used by individual organizational units have been created depending on their needs. Onboarding of newly hired employees has also been digitized by online education covering the basic business of Croatian Post, the organization, and assignments of individual organizational units. The content is available to all employees who are interested to participate. In order to make it easier for postal employees to acquire new technologies and refine existing technologies, an online knowledge base of digital competences has been created on internal websites.

Employees' focus on digitalization has been increased as one of the main determinants of the Post2022 strategy. Numerous educational resources about the technologies used in their work are available, with the aim of improving employees' competences and increasing efficiency and productivity.

Omniva (Estonia)

To contribute to the World Cleanup Day, Omniva organized its own trash collection day close to its logistics center. The World Cleanup Day is a global programme which started in 2018 in Estonia.

Omniva’s employees wanted to support this 36-hour green wave of cleanups across the globe - beginning in New Zealand and travelling around the world before ending in Hawaii. The post thus invited its employees to join the 18 million people across 157 countries by organizing their own trash collection day close to its new logistics center. It aimed to contribute to a cleaner environment and to raise awareness on environmental pollution.

On 15th September 31 employees of Omniva gathered with their families on Rukki road to take part in World Cleanup Day. Together they cleaned the cult stone from redundant moss and cut down the underwood around the stone. After the hard work people had a chance to rest, eat homemade soup and cake and share their experiences.

Instead of taking part in the action on Rukki road some of the company’s employees also held a cleanup in their own home region. The employees participated in World Cleanup Day’s actions all over Estonia. Omniva also invited its clients to join this initiative by sending them an invitation by email and through online communication channels.

During World Cleanup Day 2018, 17.8 million volunteers from 157 countries collected 82,280 tons of waste. Omniva was very proud to be part of this concrete action to fight pollution. The post’s employees cleaned the landscape gathering 20 bags of plastic waste along with 11 car tires, a five-meters long hose, many pieces of Styrofoam and glass bottles.

Österreichische Post AG (Austria)

Austrian Post aligns its operations to the Global Compact and advocates the implementation of the UN’s global objectives called the Sustainable Development Goals (SDGs). Since the implementation of the Sustainable Development Goals of the United Nation in 2016, Austrian Post took measures to mark their achievement. Among others, these goals encompass environmental protection, human rights, anti-corruption and labor laws.

Austrian Post contributes to reaching goal number seven “Affordable and Clean Energy”. For example, Austrian Post has already been procuring its entire electricity needs from renewable energy sources since 2012. Since 2017 it has exclusively used electricity from renewable energy sources in Austria.

Furthermore, Austrian Post is operating three photovoltaic plants with more than 9,000 m² surface area. Austrian Post increasingly relies on alternative driving systems in its delivery operations, and once again expanded its fleet of e-vehicles in 2018. The energy demand of the 1,592 e vehicles is provided by the electricity produced from the company’s own photovoltaic plants. With clean solar energy, free of greenhouse gas emissions and its e-vehicle fleet Austrian Post thereby helps to also achieve SDG number thirteen “Climate Action”. In total, the actions carried out by Austrian Post contribute towards achieving eleven of the 17 UN SDGs goals. By implementing these measures, the company takes over social responsibility and contributes to achieving a sustainable future worth living. Moreover, it ensures the sustainable orientation of business activities.

Reusable Packaging - *Sustainable packaging solutions for e-commerce, which are made from renewable materials/recycled PET and can be reused 10-100 times*

The ongoing boom in e-commerce is increasing the amount of disposable packaging. A preliminary study of 40 sustainable packaging solutions showed that the most effective way to reduce emissions is to establish a circular economy. In partnership with the Upper Austrian University of Applied Sciences and five retailers, Austrian Post is currently testing four different sustainable packaging solutions for e-commerce. These products are made from renewable materials or recycled PET and can be reused between 10 and 100 times. In 2022, a study will be conducted on the suitability of these packages for shipping and the extent to which the solutions are accepted by customers. The company wants to determine if the cycles that have been envisaged are actually feasible in real life. Austrian Post also wants to contribute to the circular economy in regard to the packaging issue, by taking appropriate measures to minimize waste. A project was initiated to examine the wishes and uses of businesses and consumers in terms of reusable and sustainable packaging solutions. It resulted in February 2022 in the launch of a pilot test, in partnership with 5 renowned Austrian retail companies to determine the feasibility of the project.

Posten (Norway)

The transportation sector is Norway's single largest source of greenhouse gas emissions. Posten Norge feels that cross-industry coordination is required to reduce city emissions while addressing rising

transportation demands. By electrifying trucks used in urban areas, the company hopes to minimize emissions from big cargo vehicles while also reducing local pollutants. Posten Norge declared a target in 2017 to use only renewable energy sources in its vehicles by 2025. Under the #Elskedby plan, Posten Norge has partnered with trash management company Ragn-Sells and other companies in many cities across Norway and Sweden. The companies collaborate by sharing electric vehicles and establishing a common city center hub. Every day, combined personnel would drive fully-loaded vans into the city to deliver mail and collect rubbish, often from the same customers. Emissions, traffic, and noise are minimized by using common cars. The #Elskedby initiative originated in Stockholm in 2017 and has since spread to Malmö. In Norway, the collaboration began in April 2019 in Oslo. There is no set timeline, but the program is ongoing, with the goal of implementing the model in other cities throughout Norway and Sweden. The plan is well-established in Stockholm and has resulted in a 73% reduction in CO2 emissions. The Oslo project is still in its early phases, but hopes are strong that it will result in similar emission reductions in the Norwegian capital.

5. Policy Recommendations at EU Level

The European postal sector stands at a critical juncture, with the need for transformation and adaptation to address evolving challenges and opportunities. As the sector navigates the dynamic landscape of digitalization, sustainability, and social inclusion, it is imperative that the European Union (EU) plays a pivotal role in shaping policies that foster growth and resilience. This chapter presents a set of policy recommendations carefully crafted to address key facets of the postal sector at the EU level. These recommendations aim to empower postal operators to navigate the digital age, prioritize sustainability, and contribute to societal well-being. Let's delve into each policy recommendation, accompanied by explanatory text to illuminate their importance and potential impact.

The postal sector is a key contributor to the European economy and society, providing essential services to citizens, businesses, and public administrations. The sector also plays a vital role in connecting people and regions, promoting social inclusion, and supporting e-commerce. However, the postal sector is also facing significant challenges and opportunities due to the rapid changes in technology, customer expectations, market conditions, and environmental issues. Digitization has led to a decline in traditional mail volumes, but also to an increase in e-commerce parcels and new digital services. Green transition has become a priority for addressing climate change and reducing environmental impact, but also for creating new business opportunities and enhancing customer satisfaction. Covid-19 pandemic has posed unprecedented health and safety risks for postal workers and customers, but also highlighted the resilience and adaptability of the sector.

These changes require new skills and competences for postal employees, as well as new ways of learning and working. The EU postal policy aims to ensure that affordable, permanent, high-quality postal services are available on 5 working days per week (with exemptions) throughout the EU. The postal market has gradually been opened to competition and has been fully liberalized since January 2013. The EU postal policy also aims to improve the quality of services, establish independent national regulatory authorities, and foster cooperation and dialogue among stakeholders.

Based on the analysis of the current and future skills needs and challenges in the postal sector, as well as on the best practices and recommendations for developing digigreen skills in each occupational area (back-office operations, delivery operations, post-office networks), we propose the following policy recommendations at the EU level to support the postal sector in its digital and green transition:

- **Common Framework for Skills Recognition and Certification** – To promote the development of a common framework for skills recognition and certification in the postal sector, based on the European Qualifications Framework (EQF) and the European Credit System for Vocational Education and Training (ECVET). This would facilitate the mobility and employability of postal workers across EU countries, as well as the validation of prior learning and non-formal education.
- **Innovative Training Programs and Competence-Based Learning** – To support the implementation of innovative training programmes and curricula for postal employees, based on competence-based learning outcomes and blended learning methods. This would enhance the acquisition of digital and green competences, as well as soft skills such as communication, teamwork, problem-solving, and customer orientation.
- **Participation in EU-Funded Skills Development Initiatives** – To encourage the participation of postal operators in EU-funded initiatives and projects that aim to foster digital and green skills development, such as Erasmus+, Horizon Europe, Digital Europe Programme, European Social Fund Plus (ESF+), European Regional Development Fund (ERDF), Just Transition Fund (JTF), etc. This would enable the exchange of best practices, the creation of synergies, and access to financial resources.
- **Facilitation of Stakeholder Cooperation and Dialogue** – To facilitate the cooperation and dialogue among postal stakeholders at the EU level, such as postal operators, VET providers, higher education institutions, research institutes, certification bodies, social partners, umbrella organizations, policy makers, etc. This would enhance the mutual understanding of skills needs and challenges, as well as the coordination of actions and policies.
- **Monitoring and Evaluation of Digital and Green Transformation** – To monitor and evaluate the impact of digital and green transformation on the postal sector, as well as on its skills needs and challenges. This would provide evidence-based information for policy making and decision making.
- **Alignment with Relevant EU Policies and Frameworks** – To align the EU postal policy with the relevant EU policies and frameworks that support digital and green transition, such as the European Skills Agenda, the European Green Deal, the Digital Education Action Plan, etc. This would ensure coherence and consistency among different policy areas.
- **Investment in Skills Development and Lifelong Learning** – Encourage postal operators to continue promoting the development of skills through various programs aimed at enhancing employability, with a particular focus on digital and green skills. Advocate for the implementation of lifelong learning programs to ensure that postal sector employees can adapt to the ongoing digital transformation and dynamic market reality.

- **Support for Workforce Training Initiatives** – Promote initiatives similar to those undertaken by postal operators, such as training, retraining, upskilling, internal and external mobility, coaching, mentoring, and leadership schemes, to enhance the competencies and capacities of employees.
- **Health and Safety Measures** – Encourage postal operators to prioritize the health and safety of their employees, especially during crises such as the COVID-19 pandemic. Advocate for the development and implementation of comprehensive health and safety guidelines and measures to protect postal workers.
- **Age Diversity and Inclusion** – Promote age diversity in the postal workforce and support measures to keep senior employees active and engaged in the sector. Encourage postal operators to continue providing access to job posts regardless of age, gender, disability, or origin and to actively promote gender equality and nondiscrimination.
- **Social Dialogue and Partnership** – Advocate for strong partnership and dialogue between postal operators and social partners at all levels (including trade unions) to exchange ideas, follow up on social evolutions, and support workforce development.
- **Sustainable Transportation Practices** – Encourage postal operators to adopt sustainable transportation practices, including the use of electric vehicles, biofuels, and other green technologies, to reduce carbon emissions in the postal sector. Promote investment in green logistics and the development of infrastructure for electric vehicle charging and alternative fuels.
- **Research and Development** – Support research and development efforts aimed at finding sustainable fuels and technologies that can significantly reduce emissions in long-distance transportation, with a focus on cross-border collaboration and international compatibility.
- **Environmental Responsibility** – Encourage postal operators to commit to environmental stewardship by implementing eco-friendly practices, reducing waste, and minimizing environmental degradation across their operations.
- **Technological Adaptation** – Promote the adoption of innovative technologies such as exoskeletons, extended reality (XR), computer vision, indoor mobile robots, and smart labels to enhance efficiency and safety in the postal sector. Advocate for the development and implementation of digital marketplaces to improve transparency and provide a comprehensive view of shipping options and pricing.
- **Bio-Based Materials and Sustainability** – Support the use of bio-based materials in the postal sector, especially in packaging and construction, to reduce carbon footprints and waste. Encourage the

adoption of environmentally friendly packaging solutions and practices that align with sustainability goals.

- **Promoting Sustainable Mobility Initiatives** – Encourage postal operators across the EU to develop and implement sustainable mobility initiatives similar to Poste Italiane's 'Poste Pedala' campaign. These initiatives could include incentives for bicycle commuting, promoting the use of electric vehicles, and reducing emissions from delivery fleets.
- **Digital Education and Skills Enhancement** – Support the development of digital education programs like Poste Italiane's Digital Education project. These programs should focus on enhancing digital skills among postal employees, customers, and citizens. Encourage postal operators to provide free digital resources, webinars, and online multimedia products to help individuals and businesses navigate the digital landscape.
- **Gender Equality and Workforce Development** – Promote gender equality within the postal sector, as exemplified by PostNord's goal of having 40% of managerial roles filled by women. Encourage other postal operators to adopt similar diversity and inclusion goals, along with workforce development programs that target underrepresented groups, such as long-term unemployed individuals and recent arrivals.
- **Innovation in Sustainable Finance** – Encourage postal operators to explore innovative financing mechanisms that link sustainability performance to financial incentives, as seen in BPost's revolving credit facility (RCF). Advocate for the adoption of such sustainability-linked financing tools within the postal sector, promoting environmental and social responsibility.
- **Emission Reduction Strategies** – Support postal operators in setting and achieving specific emission reduction targets, such as Posti's goal to cut emissions by 30% by 2020. Encourage the development of training and awareness programs, like the "Climate workout," to educate employees about sustainable practices and technologies.
- **Collaborative Urban Logistics** – Promote collaborative logistics initiatives like the "CULT" partnership in Antwerp. Encourage postal operators to collaborate with other companies to bundle deliveries, reduce emissions, and optimize urban logistics. Share best practices and facilitate the transfer of successful models to other cities.
- **Green Fleet Transition** – Advocate for the adoption of electric vehicles and other green technologies within postal fleets, similar to An Post's commitment to replacing diesel cars with electric vehicles. Promote green vehicle incentives, infrastructure development, and best practices for transitioning to eco-friendly delivery options.

- **Consumer Engagement and Green Living** – Support initiatives like An Post's Green Hub, which provides consumers with information on home energy upgrades and electric vehicles. Encourage postal operators to offer green finance solutions and incentives for consumers to embrace sustainable living practices.
- **Public Awareness Campaigns** – Promote the use of national and EU-level public awareness campaigns to educate citizens about the environmental and social benefits of sustainable postal services. Highlight success stories and encourage individuals and businesses to make greener choices.
- **EU-wide Sustainability Standards** – Develop and implement EU-wide sustainability standards and certifications specific to the postal sector. These standards can help postal operators measure and report their sustainability performance consistently, fostering transparency and accountability.

By implementing these comprehensive policy recommendations, the EU can encourage postal operators to prioritize sustainability, reduce their environmental footprint, enhance digital literacy, and contribute to broader societal goals related to climate action and social inclusion.

6. Conclusion

The key trend that is anticipated to have a big impact on the postal sector's future is sustainable growth and environmental policies. The postal business has an impact on the environment in at least two ways: paper usage on the one hand, and CO2 emissions from transportation and building energy consumption on the other. Postal firms recognize their responsibilities not only to society and the environment, but also to their employees, and they practice sustainable human resource management. They prioritize the construction of the greatest working circumstances for employee safety, health, social background, and continual education. Postal firms are making significant efforts to improve workplace safety and wellness. In education, as well as in the constant application of the values of diversity and equal chances. Of course, postal firms must foster an open communication culture that encourages employee participation in these processes and activities. Every year, EMMS and SMMS demonstrate fresh and innovative approaches to engaging employees in environmental challenges. Employee initiatives have the potential to help not only postal enterprises but also the workforce as a whole, therefore achieving SDG 8 - decent work and economic growth. In order to face increasing social, environmental, and economic concerns, the postal sector is investing in the creation

of alternative services, innovative new features, and the promotion of efficient postal item delivery. The postal sector can build solutions that suit customer expectations today and in the future by creating sustainable jobs and minimizing the ecological footprint.

In a rapidly evolving world marked by the convergence of digitalization, sustainability imperatives, and innovative technologies, the European postal sector stands at the intersection of progress and responsibility. The journey embarked upon by leading postal companies across Europe, as exemplified in the best practices and policy recommendations outlined in this document, underscores the sector's unwavering commitment to shaping a more sustainable, connected, and innovative future for all.

A Pathway to Sustainability

The postal sector's dedication to sustainability is evident in actions taken by companies like Groupe La Poste, Hrvatska Posta, Deutsche Post DHL Group, Austrian Post, and Posten. From environmental preservation initiatives and circular economy endeavors to renewable energy adoption and electric mobility solutions, these best practices illustrate the sector's pivotal role in advancing the Sustainable Development Goals (SDGs) set forth by the United Nations.

By actively participating in environmental cleanups, aligning with renewable energy commitments, and promoting circular packaging, postal companies have embraced their responsibility to safeguard the environment, reduce emissions, and foster eco-friendly practices within the communities they serve. The path to sustainability is not only a corporate endeavor but also a collective commitment to creating a better world for current and future generations.

Navigating the Digital Landscape

As digitalization reshapes every aspect of modern life, the postal sector is not only adapting but also leading the way. Groupe La Poste's digital training programs, the CléA Numérique initiative, and efforts to instill a digital culture among employees exemplify the commitment to empower postal workers with essential digital skills. These practices set the stage for a workforce equipped to thrive in an increasingly digital-driven world.

Moreover, the exchange of best practices, knowledge sharing, and cross-industry collaboration exemplified by initiatives like the #Elskedby program underscore the postal sector's ability to adapt,

learn, and innovate in an interconnected world. Digitalization is not just about technology; it's about creating inclusive and empowering digital ecosystems that benefit both employees and customers.

Policy Recommendations for an Inclusive Future

In Chapter 5, we put forth a set of policy recommendations at the EU level that reflect the postal sector's best practices and aspirations. These recommendations, encompassing green logistics, digital transformation, circular economy, cross-industry collaboration, and data ethics, serve as a compass for shaping the future of the postal sector in Europe.

With a focus on reducing emissions, fostering digital inclusion, promoting sustainable packaging, and advancing data ethics, these recommendations are a testament to the sector's commitment to creating a more inclusive and responsible future. They also emphasize the importance of harmonized efforts across EU member states to realize these objectives collectively.

The Way Forward

As we conclude this deliverable, it is evident that the postal sector in Europe is not merely an observer of change but a catalyst for transformation. The best practices showcased here underscore that sustainability, digitalization, and innovation are not lofty ideals but actionable strategies that propel the sector forward.

The policy recommendations presented in Chapter 5 provide a roadmap for policymakers, postal organizations, and stakeholders to navigate the challenges and opportunities of the modern era. By aligning their efforts with these recommendations, the postal sector can continue to serve as a beacon of responsible corporate citizenship, economic vitality, and community engagement.

The journey towards a sustainable, connected, and innovative future is ongoing, and the European postal sector is charting an inspiring course. By embracing these best practices and policy recommendations, we are not only shaping the postal sector's future but also contributing to a more vibrant and resilient Europe for all.

In closing, let us remember that the postal sector is not just about delivering parcels and letters; it is about delivering a brighter, more sustainable future for Europe and its citizens.

7. References

Sustainable Development Goals. In: <https://sustainabledevelopment.un.org/sdgs>

STRENITZEROVA, M., ACHIMSKY, K. (2019). Employee Satisfaction and Loyalty as a Part of Sustainable Human Resource Management in Postal Sector. In SUSTAINABILITY Volume: 11 Issue: 17. DOI: 10.3390/su11174591

IPC Postal Sector Sustainability Report 2018. Available online: <https://www.ipc.be/about-ipc/reports-library/ipc-reports.../sr2018>

IPC Postal Sector Sustainability Report 2019. Available online: <https://www.ipc.be/sector-data/sustainability>.

BOLDRON, F., BORSENBARGER, C., CREMER, H. ET AL. (2010). Sustainable growth and the postal sector: universal service versus environmental protection. In Center-for-Research-in-Regulated-Industries (CRRI) - 18th Conference on Postal and Delivery Economics Location: Porvoo, FINLAND, REINVENTING THE POSTAL SECTOR IN AN ELECTRONIC AGE Book Series: Advances in Regulatory Economics, pp. 351-365.

Bianchi, G., Pisiotis, U., & Cabrera Giraldez, M. (2022). GreenComp The European sustainability competence framework (No. JRC128040). Joint Research Centre (Seville site).

Bukovc (2016) Guide to public-private partnerships for e-services in the postal sector. UPU

McKinsey & Company. “What Is the Future of Work? | McKinsey.” Wwww.mckinsey.com, 23 Jan. 2023, www.mckinsey.com/featured-insights/mckinsey-explainers/what-is-the-future-of-work.

VUORIKARI Rina, R., Kluzer, S., & Punie, Y. (2022). DigComp 2.2: The Digital Competence Framework for Citizens-With new examples of knowledge, skills and attitudes (No. JRC128415). Joint Research Centre (Seville site).