

# Background study on Two-wheeler Last-Mile Delivery Services toward Inclusive, Low-carbon Transport Transformation in the Philippines



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# Optimizing Last-Mile Delivery: A Case Study on Two- and Three-Wheeler Services and the Transition to Low-Carbon Transport in the Philippines

## Introduction

The Philippine economy is one of the most dynamic in Asia and the Pacific, driven by urbanization, strong consumer demand, and a young, growing population. This growth is supported by an improving labor market, overseas remittances, and a declining poverty rate (World Bank, 2024). In 2021, the Philippines recorded over 73 million active e-commerce users, reflecting a rapidly expanding digital economy (International Trade Administration, 2024). The e-Conomy SEA Report 2023 highlights similar results, with the national digital economy projected to reach \$35 billion by 2025 and \$150 billion in gross merchandise value by 2030, driven primarily by e-commerce, transport, and food delivery services. Additionally, the Philippines is expected to attain upper-middle-income status by 2025, reinforcing its economic momentum (Google, Temasek, and Bain, 2023).

Additionally, the Philippine courier, express, and parcel market is estimated to reach \$1.33 billion in 2025, with further growth expected at \$1.85 billion in 2030 (Mordor Intelligence, n.d.). The Philippines has also witnessed an emerging landscape for last-mile delivery (LMD) service providers. LMD is the final step of product distribution from warehouses to customers and is a critical logistics component, directly impacting customer satisfaction and operational success. Notably, LMD accounts for 53% of total shipping costs and 41% of overall supply chain expenses (Moradi et al., 2023).

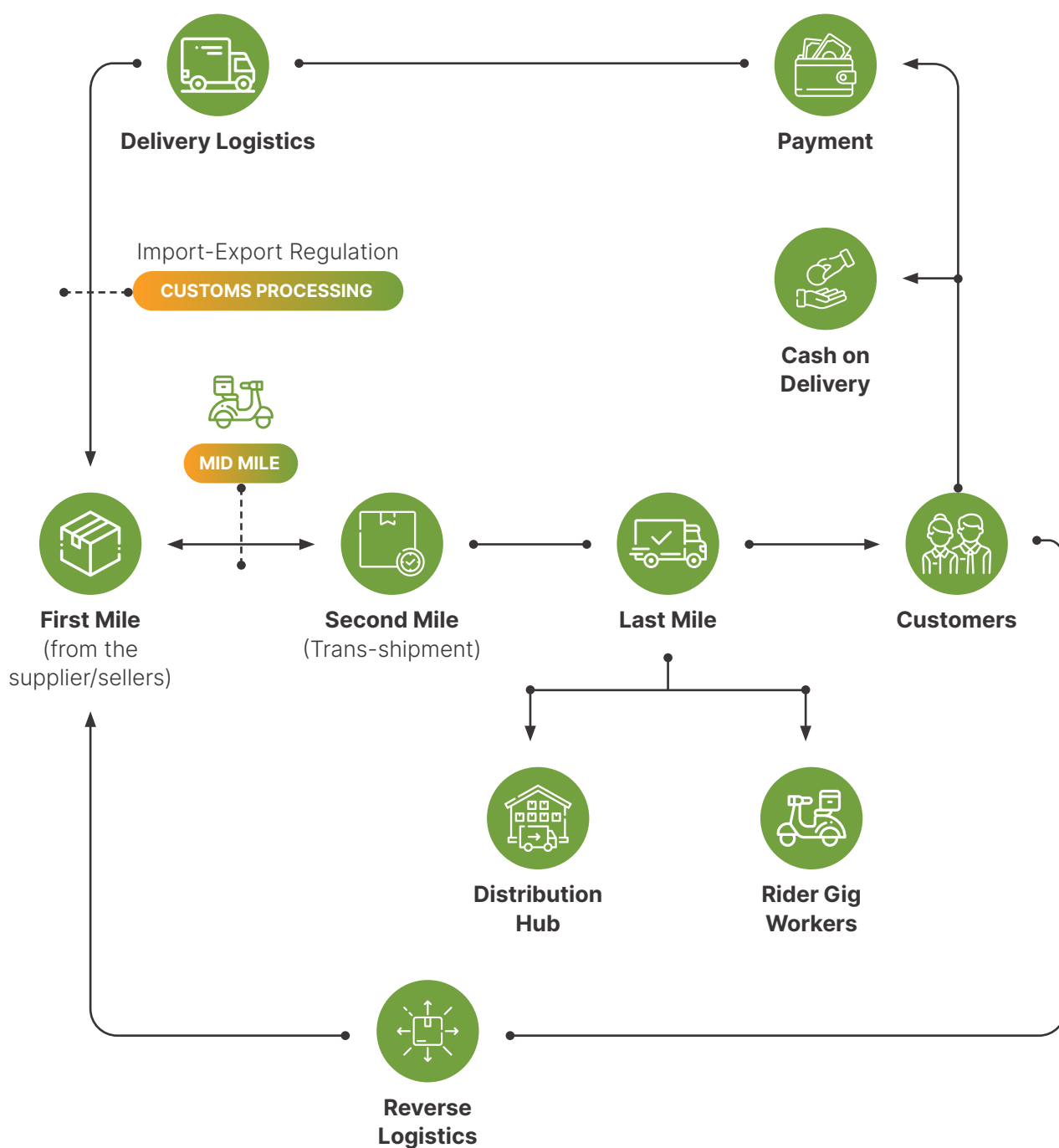
This study examines the Philippine LMD landscape and identifies key service providers as well as operational challenges and opportunities for transitioning to inclusive, low-carbon transport. It also presents recommendations to support the decarbonization of LMD services. This case study will contribute to the 2025 ASEAN Last Mile Delivery Report, which aims to offer a comprehensive overview of LMD trends in Indonesia, the Philippines, Thailand, and Vietnam. The report will provide ASEAN communities, national governments, and logistics companies with strategic insights into promoting sustainable, low-carbon delivery systems while ensuring that best practices in labor and inclusivity benefit all stakeholders equitably.

## Overview of the Philippines' Last-Mile Delivery (LMD) Service Industry

As part of its commitment to climate change adaptation and mitigation and in line with the Paris Agreement, the Philippines has set a Nationally Determined Contribution (NDC) target of reducing greenhouse gas (GHG) emissions by 75% by 2030. This target, focused on the transportation, energy, agriculture, industry, and waste sectors, is largely conditional on international support (Republic of the Philippines, 2021). Within the transportation and energy sectors, LMD plays a key role in helping the country meet this goal.

The ASEAN Guidelines on Urban Freight Transport (2024) underscores the relevance of LMD in determining the overall efficiency of the logistics process, noting that LMD services are typically characterized by shorter distances, higher frequency, and many individual deliveries. This increased frequency in service delivery poses environmental impacts, including increased carbon production, air pollution, noise emission, and traffic congestion (Maniatis, 2023).

The key points below provide a snapshot of the Philippine e-commerce logistics ecosystem and LMD landscape, as well as its relevant environmental impacts and measures in place to support the shift to greener logistics.



- A 2022 Annual Survey on Philippine Business and Industry (Philippine Statistics Authority, 2025) covered 18 sectors, with 10 reporting e-commerce sales. Transportation and storage recorded the highest share of the **total e-commerce sales** amounting to PHP **78.81 billion or 49.5% of the 2022 total**.
- Of the **3,066 registered establishments** for transport and storage, **148** were specific to **courier activities** employing **22,502 workers**. Meanwhile, warehousing and storage recorded 221 establishments employing 15,113 workers (Philippine Statistics Authority, 2024). These values indicate a robust growth in the sector.
- In 2022, a Fairwork study reported an estimated number of workers in selected digital labor platforms: GrabFood and GrabExpress: **40,000**; Foodpanda **45,000**; Lalamove **200,000**; and Angkas **27,000** (Soriano et al., 2022). Another study reported about **85,000** delivery riders in the Philippines (Manila Bulletin, 2025).
- **GHG emissions** attributed to the transportation sector in the Philippines amounted to **35.42 million tons** of carbon dioxide equivalent (Statista & Balita, 2024).
- While the Philippines' per capita GHG emissions are among the lowest in East Asia, total emissions are expected to rise from **234 metric tons** of carbon dioxide equivalent (MtCO<sub>2</sub>e) in 2020 to 399 MtCO<sub>2</sub>e by 2030, with projections indicating a potential quadrupling by 2050 if current policies and trends persist (World Bank, 2022).
- In 2022, the Philippine government enacted the Electric Vehicle Industry Development Act (EVIDA), which mandated the creation of the Comprehensive Roadmap for the Electric Vehicle Industry. This document outlines policies and programs to address electric vehicle (EV) industry challenges, including a target to achieve a **50% EV fleet by 2040** in a Clean Energy Scenario (Department of Energy [DOE], 2023).
- In May 2024, the DOE announced the **approval of expanded tax breaks for EVs** to include two- and three-wheelers, such as e-motorcycles, e-bikes, and e-trikes. These incentives reduce tariffs until 2028, supporting the broader transition to EVs in the Philippines.
- Fiscal incentives under the **Strategic Investment Priority Plan's Corporate Recovery and Tax Incentives for Enterprises Act** include an income tax holiday of four to seven years and a special corporate income tax rate of 5%, fostering a supportive environment for businesses aligned with the nation's green development goals (Lo, 2024).

Commissioned by the Department of Trade and Industry (DTI), the Evolution of Last-Mile Delivery Services in the Philippines report by transport economist Jeremiah A. Acena (2022) is also a key literature in this research. As noted in the study, under the Republic Act No. 11659 on the amended Public Service Act, LMD service is no longer classified as a public service, allowing full private sector ownership. Further, there is no single legal framework that governs the LMD sector in the Philippines.



However, different regulatory offices oversee various types of LMD service providers:

- The **DTI** regulates **freight forwarders and non-vessel operating common carriers**.
- The **Civil Aeronautics Board (CAB)** oversees **air freight forwarders**.
- The **Department of Information and Communications Technology (DICT)** is responsible for **regulating express delivery** and **messengerial services**.

The report lists over 1,000 freight forwarders and express delivery firms, with the breakdown and source as follows (Acena, 2022):

LMD Players	Regulating Office
<b>833 freight forwarders (273 domestic)</b>	DTI
<b>504 air freight forwarders</b>	CAB
<b>109 messengerial and express firms</b>	DICT

Some firms have more than one government accreditation and may even be registered on all three. Acena (2022) further suggested categorization based on the time frame required to deliver products or services from suppliers to consumers:

1. On-demand or same-day services
2. Conventional or scheduled services

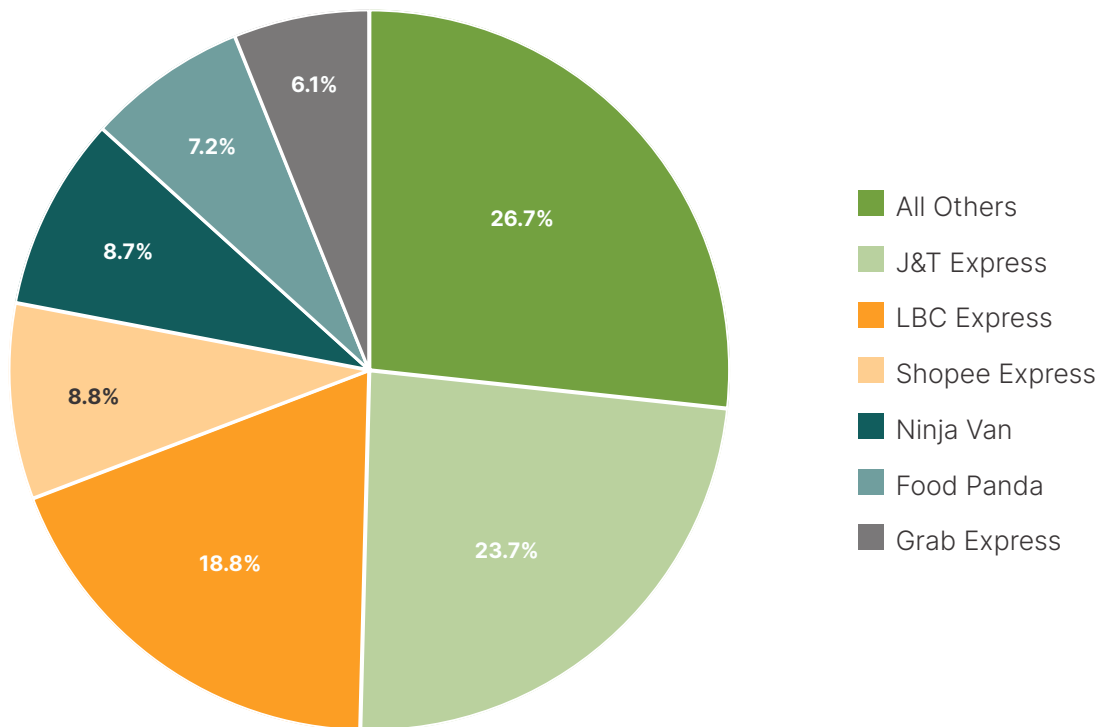
On-demand service providers such as GrabExpress, Angkas, Lalamove, and Foodpanda ensure same-day delivery, often immediately. Scheduled service providers, such as J&T, LBC, JRS Express, Shopee Express, Ninja Van, and Lazada, consolidate shipments to optimize costs, with delivery times varying with distance. Some service providers also offer adopted hybrid models of on-demand and scheduled delivery services to cater to diverse consumer needs.

Additionally, Acena (2022) identified the top key players in the Philippines' LMD sector in 2020 based on market share. J&T Express and LBC Express, both operating in the country for over a decade, lead the market with shares of 23.7% and 18.8%, respectively. These two logistics giants primarily serve major e-commerce platforms such as Lazada Philippines and Shopee Philippines. They are followed by Shopee Express, the in-house delivery service of Shopee, and Ninja Van, which also caters to both platforms. In the on-demand LMD segment, Foodpanda, and GrabExpress emerge as the leading providers.



## Market Share of LMD Companies in the Philippines based on Revenue in 2020

**Source:** Various Financial Statements of Last Mile Delivery Firms (Acena, 2022)



The next section provides a brief profile of key LMD service providers in the Philippines based on their 2020 market share revenue (Acena, 2022), thereby offering deeper insights into the LMD landscape.

## Key LMD Service Provider Profiles

### J&T Express

J&T Express is a global logistics provider operating in Indonesia, Malaysia, Philippines, Vietnam, Thailand, Singapore, Cambodia, China, UAE, Saudi Arabia, Brazil, Mexico, and Egypt, with its headquarters located in Jakarta, Indonesia.

### Low-Carbon and Urban Sustainability Initiatives

In 2019, J&T Express Philippines was launched, with its headquarters established in Taguig. It has 2,200 branches and warehouses nationwide, with a workforce of 60,000 and a fleet of 3,000 owned trucks and vehicles. J&T Express Philippines promotes bicycles, pedestrian (walker) deliveries, and the use of Bajaj three-wheelers, which provide improved fuel efficiency, enhanced storage capacity, and reliable coverage in all weather conditions (Taller, 2023).

For its Philippine operations, the J&T Express Environmental, Social, and Governance (ESG) 2023 Report highlighted initiatives such as the establishment of self-branded pick-up and drop-off (PUDO) stations. Examples of these PUDO stations are the “J&T Neighbourhood” service complexes and “YoYi Station” situated across ASEAN countries, including the Philippines. These stations are aimed at providing local residents with better postal services and optimized end delivery timeliness. To date, there is no information available on the number of PUDO stations in the Philippines.

On a broader scale, J&T Express implements a four-in-one green transportation model, which integrates fuel management, route optimization, energy efficiency, and driver training to promote energy conservation and reduce emissions (J&T Global Express Limited, 2023). Its ESG Report further lists sustainability initiatives, including the use of green packaging throughout the entire delivery cycle, from pickup to transit, delivery, and recycling, as well as the deployment of new energy vehicles to cut GHG emissions and incorporation of automotive urea to reduce nitrogen oxide emissions. In terms of procurement, J&T Express partners with suppliers certified under a “green product certification” standard. Furthermore, the company has launched 63 intelligent driving vehicles, which have collectively covered 1.8 million kilometers, contributing to reduced fuel consumption.

### Emissions Report (J&T Global Express Limited, 2023a)

Scope 1 (Direct Activities)	68.07 ten thousand tonnes CO <sub>2</sub> e
Scope 2 (Indirect Activities)	30.48 ten thousand tonnes CO <sub>2</sub> e
Scope 3 (Other Indirect Activities, including packaging, logistics, and business travel)	64.89 ten thousand tonnes CO <sub>2</sub> e

## Inclusion and Diversity

J&T Express provides ESG training to over 1,000 managers across 13 countries and holds an ISO 14001 Environmental Management System Certification, which is valid until June 2025. It has also established a Climate Change Management System aligned with the guidelines of the Task Force on Climate-Related Financial Disclosures. As of 2023, J&T Express employed 149,186 full-time staff worldwide, with women representing 22.31% of the workforce and 28.6% of the Board. Additionally, the company conducted over 15,000 safety training sessions and 30 business ethics training sessions.

In the Philippines, the J&T Express labor union is represented by the United Rank-and-File Employees of J&T Express-Federation of Free Workers, which comprises 10,000 members. News reports highlighted instances of unfair labor practices, leading to regional strikes (Building and Wood Workers' International, 2022) and calls for a nationwide strike (Depasupil, 2024), which were later called off after successful negotiations. These negotiations, mediated by the National Conciliation and Mediation Board, resulted in a settlement between the union and J&T Express management.

## LBC Express, Inc.

Founded in 1945 as a brokerage and air cargo agent, LBC Express, Inc., commonly known as LBC Express, pioneered express delivery, cargo shipping, and 24-hour door-to-door service in the Philippines. It was also one of the first logistics companies in the country to introduce EVs, launching its 100% electric "e-Cab" for delivery services in Boracay on July 25, 2012, as part of its environmental advocacy (What's in Manila, 2012). However, there is currently no available information on whether the e-Cab remains in operation or if the company has plans to expand its EV fleet in the future.

According to its 2020 Annual Report, LBC Express generates 96% of its revenue from logistics services (LBC Express, 2020). The company operates more than 1,500 branches and over 200 warehouses across the Philippines while maintaining a global presence in 29 countries. It employs over 11,000 people and partners with more than 500,000 locations worldwide. As of 2020, LBC's delivery fleet consisted of 3,289 vehicles, including 2,652 motorcycles.

## Low-Carbon and Urban Sustainability Initiatives

The LBC Express Holdings Inc. (2019) Report outlines sustainability efforts, including the launch of oxo-biodegradable pouches since 2012 and the solar power and green energy initiative in Davao warehouses. As of 2019, LBC Express maintained a consecutive nine-year accreditation under the ISO 9001:2015 Quality Management Standard. In 2017, LBC implemented a digital transformation strategy aimed at enhancing first-mile operations. However, LMD and low-carbon fleet transition are notably absent from its sustainability initiatives.

## Emissions Report (LBC Express Holdings Inc., 2019)

Scope 1 (Direct Activities)	68.07 ten thousand tonnes CO <sub>2</sub> e
Scope 2 (Indirect Activities)	30.48 ten thousand tonnes CO <sub>2</sub> e

\*The 2019 Annual Report outlines energy consumption, including direct GHG emissions from shuttle van fuel use (excluding delivery trucks, making it not representative of the entire fleet) and indirect emissions from total electricity consumption in 2018.

## Inclusion and Diversity

In 2020, LBC Express's Executive Board consisted of seven members, including one woman, while women made up 50% of the company's management team. Employment data from the same year showed a workforce that was 35% female and 65% male, with 11% of employees covered by collective bargaining agreements (LBC Express Holdings Inc., 2020).

## Shopee Express (SPX Express)

Shopee Express or SPX Express is the in-house logistics arm of the e-commerce platform Shopee, one of the biggest in the country. In 2024, SPX Express opened its biggest sorting facility in Laguna, Philippines, a 25,000-square meter warehouse that can process three million parcels daily to over 300 hubs nationwide.

SPX Express Philippines and Shopee Philippines are separate entities but are both subsidiaries of Singapore-based Sea Group of Companies. The regional headquarters of Shopee is in Singapore, but SPX in the Philippines runs through a network of local hubs and warehouses across the country. Tony Hou, CFO of Shopee's parent Sea Group, said during the latest earnings call that more than half of Shopee's orders in Asia are fulfilled by SPX Express (Lopez, 2024), underscoring the importance of the LMD segment in its operations.

## Low-Carbon and Urban Sustainability Initiatives

In 2021–2022, as part of its sustainability efforts, Shopee Express partnered with the City Government of Paranaque to handover more than 1,000\* kilos of PET bottles recovered from the Shopee Xpress facilities in the city. The initiative seeks to recover plastic waste for upcycling, minimizing waste that is sent to landfills.

In its 2023 Sustainability Report, Sea Group Company outlined its global operations using the Sustainability Accounting Standards Board Materiality Map and aligned its efforts with the UN Sustainable Development Goals (Sea Group Company, 2023). While the report highlights various social impact initiatives, it does not provide specific information on Sea Group's low-carbon transport transition or other green logistics efforts in the Philippines.



\*A reported total of 1,128.5 kilos from 717 kilos in 2021 (SPX Express PH, 2021) and 411.5 kilos in 2022 (Steven, 2022).

## Emissions Report (Sea Group Company, 2023)

Scope 1 (Direct Activities)	118,456 tCO <sub>2</sub> e
Scope 2 (Indirect Activities)	229,205 tCO <sub>2</sub> e

## Inclusivity and Diversity

The gender ratio of Sea Group's global workforce is 42% female and 58% male, with women representing 52% of mid-to-senior-level roles. Governance disclosures note that one of seven board members is female and that training programs are offered to employees at all levels.

## Ninja Van

Founded in 2014 in Singapore, Ninja Van Group has quickly expanded across key Southeast Asian markets, entering the Philippines in 2016. Headquartered in both Singapore and Makati, the company provides LMD and third-party logistics services. Operating in six countries, Ninja Van delivers two million parcels daily, supported by a workforce of over 67,000 and serving nearly 110 million customers. In the Philippines alone, the company completed 18 million deliveries in 2023, operating through 20 warehouses, 400 stations, and a team of 8,000 employees, including drivers. Most recently, the Group invested \$50 million in automation technology for its regional parcel sorting hubs, including its facility in Cabuyao (Ayeng, 2024).

## Low-Carbon and Urban Sustainability Initiatives

Ninja Van's ESG sustainability framework and roadmap (2022) focuses on three key pillars: managing carbon emissions, fostering thriving communities, and building a responsible business. The company reports that it is in the early stages of transitioning toward more environmentally friendly operations. This transition includes efforts to measure its total carbon emissions and assess the feasibility of implementing climate-friendly solutions, such as EVs and cleaner-burning fuels, across its regional network. Additional sustainability initiatives involve reducing single-use plastics in warehousing operations and recycling waste materials where possible. As of this writing, Ninja Van has yet to publish a comprehensive ESG report.

The company has also introduced driver-specific training programs aimed at equipping delivery personnel with the necessary skills to manage on-the-job risks. The training framework covers topics such as health, safety and environment, defensive driving, emergency drills, and driver onboarding. Additionally, Ninja Van's website features various content pieces that highlight the benefits of outsourcing LMD, common challenges in the sector, and the company's service solutions to address them.

## Foodpanda

Launched in 2014, Foodpanda Philippines now operates in 150 cities and municipalities across the country. Its parent company, Delivery Hero, is a global food delivery service operating in approximately 70 countries across four continents. Foodpanda is headquartered in Berlin, Germany, with a regional office for Asia Pacific in Singapore and a local office in Makati, Philippines.

### Low-Carbon and Urban Sustainability Initiatives

For its 2023 operations, Foodpanda Philippines released an infographic (Manila Standard, 2024) reporting several sustainability initiatives aimed at promoting inclusivity and reducing carbon emissions. These initiatives included the establishment of 70 pandaPatrol stops across 32 cities and provinces to support and assist delivery partners and the use of sustainable delivery methods, such as bicycles, for over 55% of all orders. During National Environment Month in November 2023, over 7.6 million customers opted out of single-use cutlery, contributing to more than 24 million cutlery opt-outs for the year and reflecting a trend toward conscious dining and Foodpanda's promotion of eco-friendly, waste-reducing practices.

### Emissions Report (Delivery Hero, 2023)

For its global operations, Foodpanda's parent company, Delivery Hero, released a GHG Accounting report based on "The Greenhouse Gas Protocol: GHG Protocol: A Corporate Accounting and Reporting Standard – Revised Edition" (GHG Protocol) and the complementary "Corporate Value Chain (Scope 3) Accounting and Reporting Standard."

<b>Scope 1 (Direct Activities)</b>	38,825 tCO <sub>2</sub> e
<b>Scope 2 (Indirect Activities)</b>	59,358 tCO <sub>2</sub> e
<b>Scope 3 (Other Indirect Activities, including packaging, logistics, and business travel)</b>	4,147,973 tCO <sub>2</sub> e

To address this, the company has adopted a Climate Action Plan validated by the Science-Based Targets Initiative, targeting a 50.4% reduction in Scope 1 and 2 emissions and a 58.1% reduction in Scope 3 emissions per million euros of gross profit by 2032, with 2022 as the baseline. The plan includes sourcing 100% renewable electricity for company-owned or leased infrastructure by 2032 and achieving 65% zero-emission deliveries by the same year. Strategies include increasing bike and pedestrian deliveries to 15% and transitioning 50% of orders to EVs.

Additionally, the report highlights initiatives focused on rider welfare, employee development, diversity and inclusion, and governance. However, it does not provide details specific to Foodpanda's operations in the Philippines, nor does it outline any low-carbon initiatives unique to its activities in the country.

## Inclusion and Diversity

To further support its delivery partners, Foodpanda provided livelihood assistance and entrepreneurship training, as well as enhanced insurance coverage of up to PHP 250,000 for its delivery partners. In line with its commitment to diversity and inclusion, Foodpanda also tripled the number of its “Women on Wheels” partners and doubled the number of senior citizens within its delivery fleet nationwide (Manila Standard, 2024).

## GrabExpress

Grab, a leading ride-hailing technology company in Southeast Asia, operates in eight countries and offers LMD services through GrabExpress, which provides instant and same-day delivery using motorbikes, bicycles, sedans, and multi-purpose vehicles (MPVs).

## Low-Carbon and Urban Sustainability Initiatives

In the Philippines, Grab has expanded its mobility services with the acquisition of MOVE IT for two-wheel transportation while deliveries continue through GrabExpress. Currently, both services primarily rely on conventional motorcycles. In mid-2024, Grab Philippines partnered with BYD Cars Philippines to pilot the integration of EVs into its ride-hailing fleet; this initiative does not include delivery operations (Grab, 2024).

Globally, Grab’s 2023 ESG Report (Grab, 2023) outlines key priorities such as transitioning to low-emission vehicles, promoting zero-emission transportation modes, and integrating renewable energy into its facilities. The company reported a 2.1% reduction in carbon intensity for mobility and an 8.2% reduction for deliveries, all of which were achieved through the adoption of low-emission vehicles and operational improvements. Additionally, 6.3% of total distances traveled were completed using low- or zero-emission modes, including electric and hybrid vehicles, bicycles, and walking. However, the report does not detail any low-carbon initiatives specific to Grab’s delivery operations in the Philippines.

## Emission Report (Grab, 2023)

Scope 1 (Direct Activities)	36,062 tCO <sub>2</sub> e
Scope 2 (Indirect Activities)	53,599 tCO <sub>2</sub> e
Scope 3 (Other Indirect Activities, including packaging, logistics, and business travel)	2,380,339 tCO <sub>2</sub> e (primarily from rides and deliveries, which account for 2,135,068 tCO <sub>2</sub> e)

Additional key players in the Philippine LMD services landscape using two- or three-wheelers in the conventional and on-demand segments include the following:

- **JRS Express**

A Filipino-owned business, JRS Express was established in 1961 and is presently one of the largest express delivery service providers in the Philippines. It lists about 5,000 employees with 465 branches nationwide, offering courier services, logistics, and supply chain solutions. Similar to J&T Express, JRS Express has expanded its fleet to include Bajaj three-wheelers for more efficient fuel consumption, increased load capacity, and better coverage. JRS also employs delivery partners using bicycles.

- **Lazada**

Founded in 2012 with headquarters in Singapore and over 10,000 employees globally, Lazada Group operates across Indonesia, Malaysia, the Philippines, Singapore, Thailand, and Vietnam and has one of the largest logistics and payment networks in Southeast Asia. In 2016, Lazada became the flagship platform of the Alibaba Group. Lazada also launched its third ESG Impact Report in 2024, showcasing sustainability efforts. Since September 2023, all carton boxes in five Southeast Asian countries, including the Philippines, have been Forest Stewardship Council-certified, with Lazada Logistics also reusing inbound boxes as void fills to reduce plastic use (Lazada Group, 2024).

- **Lalamove**

Offering third-party logistics solutions and same-day delivery services for business owners, Lalamove utilizes various vehicles, such as motorcycles, sedans, trucks, and MPVs, to deliver goods in Manila, Pampanga, and Cebu. In 2023, Lalamove released its Sustainability Report, covering green initiatives across its regional operations, including the adoption of new energy vehicles; setting short-, medium-, and long-term goals for achieving net-zero targets; and supporting driver partners through measures such as educational and financial assistance programs for 100 Filipino drivers' children (Lalamove Singapore, 2023).

- **Angkas**

Angkas is a local motorcycle taxi platform that has expanded its operations to same-day delivery services. In an interview, Angkas CEO George Royeca confirmed their intention to enter the EV market, highlighting the need for regulation rather than banning and emphasizing that the EVs they are considering are road-worthy motorcycles suitable for national roads (One News PH, 2024). The company has also partnered with Suzuki, wherein 15 selected riders were provided access to motorcycle models renowned for durability, fuel efficiency, and comfort (MotoPH, 2024).

- **Xpress**

Officially launched in February 2025, Xpress, a member company of PJ Lhuillier Group, has unveiled its partnership with BYD EVs, with the aim to redefine urban transport with reduced carbon emissions while creating economic opportunities for local drivers under its Xpress Negosyo Program (Xpress Business Program). The partnership with BYD and ACMobility supports Xpress' target of transitioning 30% of its fleet to EVs within three years toward a



sustainable urban mobility while the business program will provide drivers with accessible financing and payment terms to acquire their own EVs. To support drivers making the transition from conventional vehicles, Xpress has also rolled out a zero-percent commission program for a limited period, allowing EV and hybrid drivers to retain full earnings and recover faster from the investment while realizing the immediate financial benefits of sustainable mobility; the company has also established EV charging networks across the country (Xpress, 2025).

As reflected in its app in March 2025, Xpress was on its pilot run for its ride-hailing services, which offer conventional motorcycles as the primary mode of transportation available, with sedan and SUV vehicles being in beta mode. The app noted upcoming services, including Xpress Send with same-day deliveries, Xpress Eats, Xpress Mart, and Rent. Presently, the option to select an electric two- or three-wheeler vehicle is not yet available in the app.

A desk review of publicly available information, including annual and ESG reports, news and media features, and press releases, on the leading LMD service providers in the Philippines indicates that sustainable practices to “green” the LMD sector are in place. However, significant room remains for advancing sustainable urban mobility development through deeper integration, increased investments, and stronger intersectoral collaboration.

LBC Express and Shopee Express, ranked among the top performers in revenue and market share in 2020, presently have an opportunity to enhance and communicate increased efforts on sustainable, inclusive, and low-carbon fleet transition, if available. Meanwhile, J&T Express showcases integrated green logistics initiatives across its operations and can further expand its sustainability efforts in the Philippines. By strengthening these commitments, these industry leaders can align their market leadership with sustainability goals, contributing to carbon reduction while maintaining their competitive edge.

Additionally, Foodpanda and Ninja Van, while ranking lower in market share, have emerged as leaders in reducing carbon emissions and sustainability efforts. These organizations, with headquarters outside the Philippines, demonstrate an integration of sustainability efforts and logistics operations. They thus offer a model for others in the industry to emulate, underscoring the potential for broader adoption of environmentally conscious practices across the sector.

Additional market leaders and emerging players are also worth noting, including JRS Express, GrabExpress, Lalamove, and Angkas, which continue to expand operations. Locally owned Xpress shows upcoming potential for integrating electric two-wheelers while Mober is primarily focused on electric trucks, with no available information on the inclusion of two-wheelers in its fleet. Both contribute to low-carbon transport and logistics solutions.

## Operational Challenges and Opportunities

The Philippines ranked 43rd among 139 economies in the World Bank's 2023 Logistics Performance Index (DTI, 2023), reflecting significant sectoral improvements. However, the country's unique geography, comprising over 7,000 islands, continuously necessitates innovative logistics solutions, with key hubs for e-commerce logistics concentrated in Manila, Quezon City (Luzon), Cebu (Visayas), and Davao (Mindanao) (Gupta, n.d.). Rising fuel prices also add pressure, impacting the overall cost of services and emphasizing the need for efficient and sustainable logistics solutions.

The sectoral assessment of Acena (2022) highlights a fragmented logistics network, characterized by numerous small and medium-sized enterprises operating independently. The study emphasizes the need for a more streamlined system, improved coordination between public and private sectors, better harmonization of local and national requirements, strengthened safety and protection for LMD stakeholders, and skills development for delivery riders. Addressing these issues can further strengthen the sector, which has been observed to have a growing market for service providers, large customer base, and a high demand for LMD services.

According to LBC Express Holdings Inc., the lack of infrastructure and access to many rural areas pose an issue for logistics companies wanting to expand in untapped areas in the Philippines (Cordero, 2017). The company aims to build more branches beyond urban centers to expand its network with 100 stores every year.

For Singapore-based logistics company, Ninja Van, inadequate logistics network may lead to longer resupply trips, which can cause stockouts and lost sales (BusinessWorld, 2024). Retailers often encounter issues when restocking stores far from local logistical providers, with rising concerns with peer-to-peer providers. A media release shows that in 2024, Ninja Van Philippines introduced Ninja Van Restock, a new service that streamlines the resupply and delivery process to ensure flexibility and cost optimization with the benefit of nationwide coverage.

To meet their carbon emission reduction targets, companies such as Grab, J&T Express, and Foodpanda have formed partnerships with transportation authorities and private organizations to improve infrastructure and regulations for EVs. These partnerships, such as that between Grab and BYD, often include technical support from EV manufacturers to facilitate the transition to sustainable transportation. Additionally, J&T Express, Lazada, and JRS Express, which operate their own first- and last-mile logistics across Southeast Asia, have collaborated with Bajaj three-wheelers for deliveries.

Government incentives, such as tax breaks and reduced taxes on two- and three-wheeled EVs, further encourage private sector investment and adoption by delivery partners, promoting sustainable LMD solutions.

## Conclusion and Recommendations

The Philippines' fast-growing economy is supported by a surge in e-commerce and a robust transport sector, particularly in LMD, which drives jobs and revenue while currently producing relatively low GHG emissions. However, without action, emissions are expected to rise sharply, threatening the country's NDC targets.

To address this issue, several leading LMD companies in the Philippines are implementing innovative and sustainable practices. J&T Express, Foodpanda, and JRS Express promote low-emission transport by using bicycles, pedestrian delivery, and three-wheelers while Angkas aims to explore EVs. J&T Express also leads in expanding PUDO stations to enhance access and reduce carbon footprint. Route optimization and driver efficiency are emphasized through models like J&T Express' Four-in-One Green Transportation, Foodpanda's pandaPatrol, and Ninja Van's safety and driving training programs. Companies such as Shopee, Lazada, and J&T are advancing sustainable packaging through green materials and waste upcycling efforts, while Grab and Xpress have established partnerships with EV manufacturers. Further, the Philippine Electric Vehicle Industry Development Act and supporting fiscal incentives, such as tax breaks and income tax holidays, serve as strong foundations for low-carbon transition and EV adoption.

Accelerating the shift of the LMD sector toward sustainable, low-carbon practices calls for strong public-private collaboration, alignment of policies with climate goals, deeper integration of LMD into regional and urban transport systems, and standardized data collection with transparent GHG reporting for effective monitoring and accountability. Service providers such as J&T Express, Grab, and Foodpanda, already operating in the Philippines, can leverage, replicate, and scale their successful low-carbon initiatives from other ASEAN markets while local brands such as Angkas, Lalamove, and Mober can adopt and pilot low-carbon solutions, supporting the essential transformation of the sector. A DTI-commissioned study by Acena (2022) also identifies key opportunities, including an inventory of all LMD-related regulatory processes to streamline operations and reduce bureaucracy, an establishment of a DTI E-Commerce Bureau to oversee sector growth and support protective legislation for LMD stakeholders, and the formation of an LMD Service Providers Association to strengthen industry collaboration. These combined efforts aim to strengthen the LMD sector in the Philippines by improving its operational efficiency, expanding its reach, fostering a supportive regulatory and business environment, and strengthening national climate resilience.

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