Lime for a sustainable Paris

A STUDY ON LIME'S ENVIRONMENTAL IMPACT IN PARIS, 2018-2019

Lime is dedicated to providing clean, reliable, and safe transportation for Parisians. This Sustainability Report outlines the benefits that shared e-scooters have had in Paris, the potential for future impact, along with insight about Lime's sustainable business practices.

Contents

Executive Summary

Lime's recent arrival in Paris has provided Parisians an alternative mode of transport that is convenient, sustainable, and fun. Between late June, 2018 and early September, 2019, Parisians adopted e-scooters at a phenomenal rate, removing over 1.2 million motor vehicle trips from Paris streets[1]. A recent study by the 6t-Bureau de Recherche found that e-scooters now account for 0.8%-1.9% of total personal trips inside the City and support the use of existing public modes of transport[2].

Initial results of Lime's first year of operations in Paris demonstrate that Parisians' rapid uptake of e-scooters is having a positive and material impact toward achieving Paris's environmental goals. Projections suggest that e-scooters can play an increasingly important role in supporting Paris's goals of a carbon neutral and 100% renewable energy city.

Parisians' rapid uptake of e-scooters is having a positive and material impact toward achieving Paris's environmental goals.

1. 6t-bureau de recherche, 2019 and Lime data.
2. Lime rider survey, July 2019. Sample size of more than 18,000 riders and more than 36,000 trips taken in 89 markets.

Supporting Paris

Mayor Hidalgo's Administration has made environmental leadership a core focus of its work and the City has been widely recognized for its significant progress in reducing the use of personal vehicles. Lime's operations have helped advance progress toward the CIty's environmental goals by:

Reducing Emissions and Improving Air Quality

Parisians' use of Lime e-scooters instead of motor vehicles prevented more than 330 metric tons of CO_2 emissions[3] in the past year. This is the equivalent of avoiding the use of 140,000 litres of gas or the carbon sequestered by planting roughly 5,000 tree seedlings grown for 10 years[4]. Projections indicate that by 2030, the increasing adoption of e-scooters could prevent over 10,000 metric tons of CO_2 emissions and 300 kg of local particulate pollution annually.

Charging with 100% Renewable Energy

In 2019, Lime became the first -- and remains the only -- electric e-scooter operator in France to partner with a local renewable-energy supplier. Planète OUI powers all Lime-charged e-scooters and warehouse operations with 100% renewable energy from local French-based wind, solar and small hydro projects. Lime has purchased more than 163.5 MWh of local renewable energy to charge its fleet, helping the City of Paris meet its 2050 goal of 100% renewable energy in transport.

Increasing Access to Transportation Options for Parisians

Lime's e-scooters provide transportation service to many people who do not own a vehicle, complementing a car-free lifestyle and future car-free Paris. Lime's ridership is strongest in Arrondissements with low vehicle ownership; 90% of Lime trips happen in the areas where fewer than 50% of households own vehicles. Additionally, 70% of riders report using an e-scooter to access public transportation in the last month, adding to mobility service options and providing riders with the freedom of multimodal practices.

3. International Council on Clean Transportation, 2019, 6t-bureau de recherche, 2019, and Lime data. CO_2 emissions calculated using an emissions factor of 165 grams CO_2/kilometer and a mode shift from motor vehicles of 9.9%.
4. Based on a car driven 18,500 kilometers (11,500 miles) in a year with a fuel economy of 9.35 liters/100 kilometer (22 miles per gallon) and carbon dioxide emission rate of 0.00234 metric tons per liter of petrol (0.00889 metric tons per gallon of motor gasoline). Figures from US EPA, 2018

0.8%–1.9% of all personal trips inside the City are by e-scooter

1.2 million motor vehicle trips were replaced by e-scooters, avoiding 330+ metric tons of CO_2 emissions.

20 million kilometers, with **32,000 daily trips**

Powered by **100% renewable energy,** with 163.5 MWh of local renewable energy purchased from Planete OUI

97% landfill diversion with recycling partners, Comet and SNAM.

A 100% electric vehicle fleet in 2020 and 80% electric by the end of this year charged on local renewable energy.

2000+ trips per e-scooter

Lime's Sustainable Business Practices

Sustainability is core to Lime's mission and, at just two years old, the company is deeply engaged on the journey of data-driven continuous improvement.

A recent life cycle analysis on the company's Generation 2.5 e-scooter has guided priorities for action throughout Lime's product and operational sustainability efforts, with a concentrated focus on:

Extending Product Durability to 12+ Months

Lime's newest Generation 3 e-scooter, recently deployed in Paris, is designed for the demands of the sharing economy. Updated product design allows for repair and reuse of parts and extends the e-scooter's lifetime to exceed a year of heavy use. Lime's extensive repair and reuse program focuses on getting scooters back into operation whenever possible and when a scooter cannot be repaired, it's broken down for parts to be reused or recycled.

Recycling All E-Scooters at the End of Life

Lime partners with qualified local recyclers, COMET and SNAM who have supported the company in achieving 97% landfill diversion through best in class and locally-based recycling programs.

Sustainable Field Operations

Lime is working toward more efficient, lower carbon operations by transitioning its operations vehicle fleet to 80% electric by the end of the year and to 100% in 2020, and expanding the use of cargo trikes for collecting and redeploying scooters. For the vehicle emissions that Lime can't currently reduce, the company offsets all emissions.

Looking Forward

Lime is committed to supporting the City's vision of making Paris a resilient, inclusive, carbon-neutral city powered entirely by renewable energy by 2050, and looks forward to building upon these promising first year results and learnings to transition to a zero-carbon future.

Global Mode Shift

Globally, one in four riders (25%) report replacing car trips––driving, ridesharing, taxi–– with zero-emissions scooter rides. From this mode shift, Lime estimates that riders across the globe have avoided over 40 million kilometers of car travel, prevented more than 9,000 tonnes of CO_2 emissions, and saved about 4.5 million liters of gas, or the equivalent of taking roughly 1,900 cars off the road for a year.

Helping Paris Meet its Ambitious Climate Goals

Paris's vision of a "carbon-neutral and 100% renewable energy city"[5] will require a massive transition in infrastructure, investment, and mindset. According to the Paris Climate Action Plan (2018), city-center transport is currently responsible for 17% of all energy consumption in the Paris area and 24% of its greenhouse gas (GHG) emissions.

Lime's sustainable transportation options and commitment to the environment can help the City advance its ambitious 2030 and 2050 goals to cut greenhouse gas emissions from transportation and reduce the associated atmospheric pollutants.

Parisians have adopted e-scooters at a phenomenal rate, supporting Paris's climate goals for clean, shared modes of transport. Since Lime launched its first e-scooters in Parisin July 2018 to September 2019, Parisians rode Lime more than 12 million times, an average of over 32,000 daily trips, travelling over 20 million kilometers.

Parisians have adopted e-scooters at a phenomenal rate, supporting Paris's climate goals for clean, shared modes of transport.

5. Paris Climate Action Plan, 2018

A recent 6t-bureau de recherche study[6] found that e-scooters now account for 0.8%-1.9% of total person trips (auto, transit, walk, bike, etc.) inside the City. By comparison, bicycle trips now represent 5% of total trips[7] and have grown at a modest pace. The 2010 EGT report states that it has taken 10 years for bike mode share in Paris to increase from 1.6% in 2000 to 3% in 2010[8].

These initial results demonstrate the unprecedented growth of micro-mobility after only 12 months, and signal that shared micro-mobility can have an even greater use and impact in the future

LIME'S E-SCOOTERS HAVE PREVENTED OVER

1.2 MILLION

MOTOR VEHICLE TRIPS IN PARIS, OR

2 MILLION

KILOMETERS OF TRAVEL.

6. Bureau de recherche 6t, 2019
7. Heran, 2017
8. Enquête Globale de Transport, 2010.

Changing the Way Parisians Get Around

As global leaders, Mayor Hidalgo's Administration is paving the way for other cities to follow Paris's lead and successes in efforts to reduce personal automobile use. Over half of all journeys within central Paris are made by foot, and the City is leading global efforts to adopt clean, shared and tranquil mobility.

Mode Shift

Just under 10% of Lime riders report that they would have otherwise taken a vehicle with a combustion engine including personal cars, taxi, hailed, and shared driving services[9]. This is a comparatively low figure against Lime's global average (25%) and compared to the most car-intensive cities where Lime operates (50% in Santa Monica, California[10]). However, low mode shift signals the City's success to date in reducing personal automobile use, while also highlighting the opportunity for future reductions to achieve the City's ambitious but achievable goals, such as a target of 15% of journeys being made by bicycle.

To help continue to expand Lime's mode shift over time from cars to e-scooters, in addition to constantly optimizing deployments, Lime has undertaken several platform integrations. Lime is the only e-scooter company to integrate with Uber, allowing users to choose a scooter over vehicle for their trip. Lime is also the only provider to integrate with Google Maps, furthering the company's initiative to be a multi-modal solution with transit.

In one year, Lime scooters have removed 1.2 million car trips which is the equivalent of two car free days in Paris.

9. Bureau de recherche 6t, 2019
10. City of Santa Monica, 2019

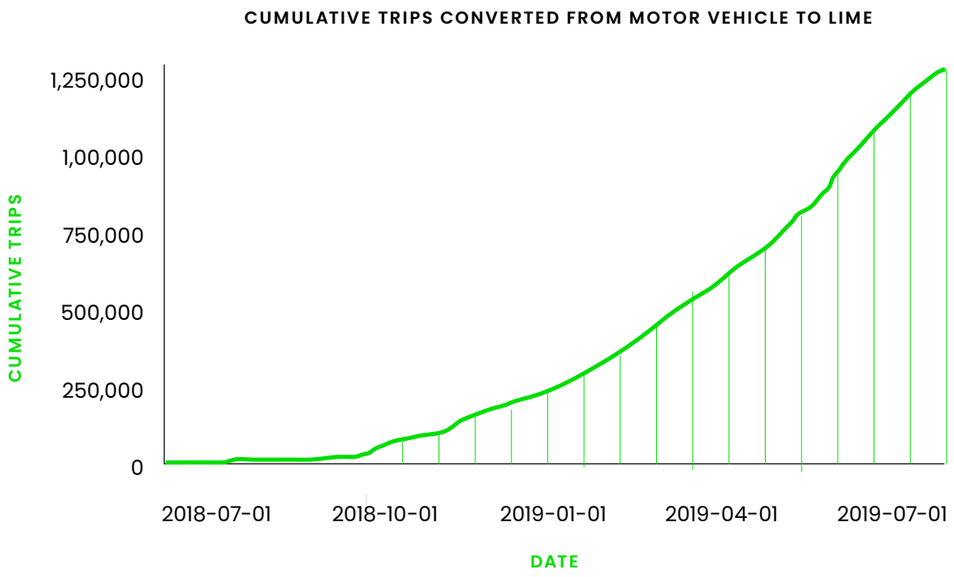
Convenient & Efficient

Lime scooters' speed and ease of use contribute to a strong first- and last-kilometer connection. According to the 6t bureau de recherche, 68% of Parisian riders chose Lime scooters for their time-saving advantages, a welcome option in a city that holds the national record for time spent traveling to and from work. The 6t researchers further found that "intensive users" (7%), riders who use e-scooters on a daily basis, prefer scooters because of their efficiency and convenience.

Even with a relatively modest mode shift, the rapid adoption of e-scooters is making a large aggregate impact. In Paris, Lime's e-scooters have prevented over 1.2 million motor vehicle trips (2 million km of travel) as shown in Figure 1, and is contributing to the City's efforts in reducing car traffic and providing alternative, shared modes of transport.

According to a Sam Schwartz Consulting analysis of 2010 Enquête Globale de Transport data, this magnitude of car travel reduction is equivalent to two completely car-free days for the City[11].

Figure 1. Lime Growth in Paris



11. Enquête Globale de Transport, 2010. Parisians made approximately 8 million daily person trips in 2010 (includes all modes: walk, transit, car, etc.), and 7% of those trips were by motorized vehicles. This equates to approximately 560,000 motor vehicle trips daily.

Multi-Modal Travel

According to a July 2019 Paris rider survey, 70% of Parisian riders used Lime to access transit at least once in the last month, and 38% of local riders use an e-scooter at least once per week with 19% of rides used for commuting[12].

70% of Parisian riders used Lime to access transit at least once in the last month.

In the 6t study, riders reported that 23% of e-scooter trips were multimodal—combined with public transportation (66%), walking (19%), personal car (6%), bikeshare (3%), other (2%), ride-hailing (2%), and other modes like taxi, shared moped, personal bike, personal moped. According to the 6t report, "these results strongly suggest that free-floating e-scooters have become an additional option, thereby adding to the range of mobility services and allowing users to develop ever more multimodal practices. [...] This new mode of transportation responds to clear demand and has rapidly become an integral part of the mobility offer [of] Paris."

E-scooters have added to the range of mobility services and allowed users to develop even more multimodal practices.

12. Lime rider survey, July 2019. Sample size of more than 18,000 riders and more than 36,000 trips taken in 89 markets.

Congestion and Pollution

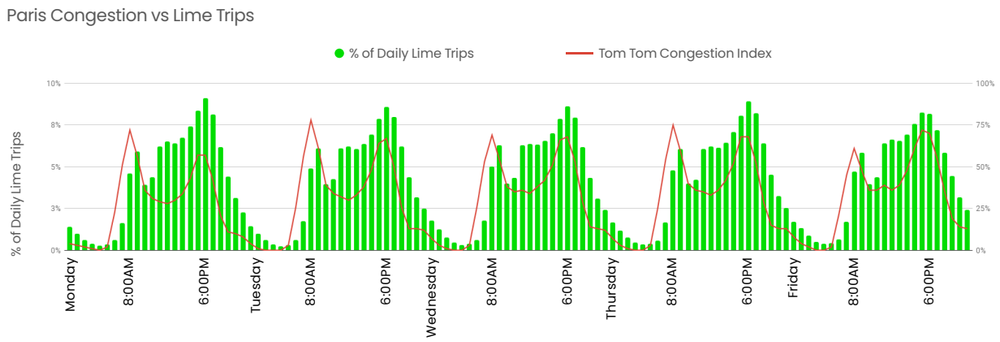
Based on analysis of Lime usage data in Paris, riders take the most trips during morning and afternoon peaks in traffic congestion, with approximately 45% of weekday trips taking place during peak commuting hours. According to the 6t study (2019), 68% of riders stated that time savings were a main reason to use Lime, and another 22% used Lime for its door-to-door convenience.

First, I thought it was a fun mode of transportation, but, then, it's also became very, very useful.

-Lime Rider in Paris[14]

Figure 2 shows how Lime provides residents of Paris faster, cleaner, and more space-efficient options during the most congested times of the day.

Figure 2. Paris Traffic Congestion vs 2019 Lime Activity[15]



Traffic-generated local pollution, most commonly PM2.5, PM10, NOx, and ozone, is concentrated in the urban core of Paris, and causes an average of 2,500 deaths per year[16]. The center of Paris is also a Low Emission Zone, limiting travel to only specially-distinguished vehicles based on their level of air pollutant emissions[17]. This region of the City correlates to where Lime serves most of its trips supporting the City's plans for breathing spaces, green streets and quiet streets.

13. Bureau de recherche 6t, 2019
14. Bureau de recherche 6t, 2019

15. TomTom, 2019
16. Santé publique France, 2016, summarized in Mediapart, 2016
17. Métropole de Grand Paris, 2018. Low Metropolitan Emission Zones.

Environmental Benefits and Potential

To make meaningful progress in reducing transportation-related emissions and pollution, additional clean modes of travel are required.

Two 2030 growth scenarios illustrate the potential for Lime e-scooters to help achieve Paris's Climate Action Plan goals, reducing between 4,341 and 10,204 metric tons of CO_2 emissions annually.

Table 1 provides details on how these carbon reductions are achieved, and Figure 3 illustrates the annual emissions avoided from these scenarios for the year specified.

Table 1. Lime Growth Scenario Details and Annual Impacts

	Lime's First Year of Impact Actual figures	Growth Scenario 1: Matching Short Distance (<5km) Auto Trips	Growth Scenario 2: Extrapolating based on Current Growth
	2018 - 2019	**Annual potential by 2030:**	
Total Lime Trips	12,002,000	104,244,000	245,000,000
Total Lime Kilometers Traveled*	20,195,000	175,412,000	412,264,000
Auto Mode Shift %	9,9%	15%	15%
Auto Trips Replaced by Lime	1,188,198	15,636,600	36,750,000
Auto Kilometers Replaced by Lime	1,996,173	26,269,488	61,740,000

Annual Air Pollution and Greenhouse Gas Reductions from Auto Trip Replacement[18] ...

	2018 - 2019	Annual potential by 2030:	
Carbon/CO_2 (Metric Tons)	330	4,341	10,204
Particulate Matter (Grams)	10 000	131,600	309,200
NOx (Grams)	120,000	1,578,700	3,710,400

*Assuming an average trip distance of 1.68km, derived from existing Lime data

18. International Council on Clean Transportation, 2019 and Lime data. Emissions calculated using emissions factors of 165 grams CO_2/kilometer, 0.005 grams PM/kilometer, and 0.06 grams NOx/kilometer.

Growth Assumptions

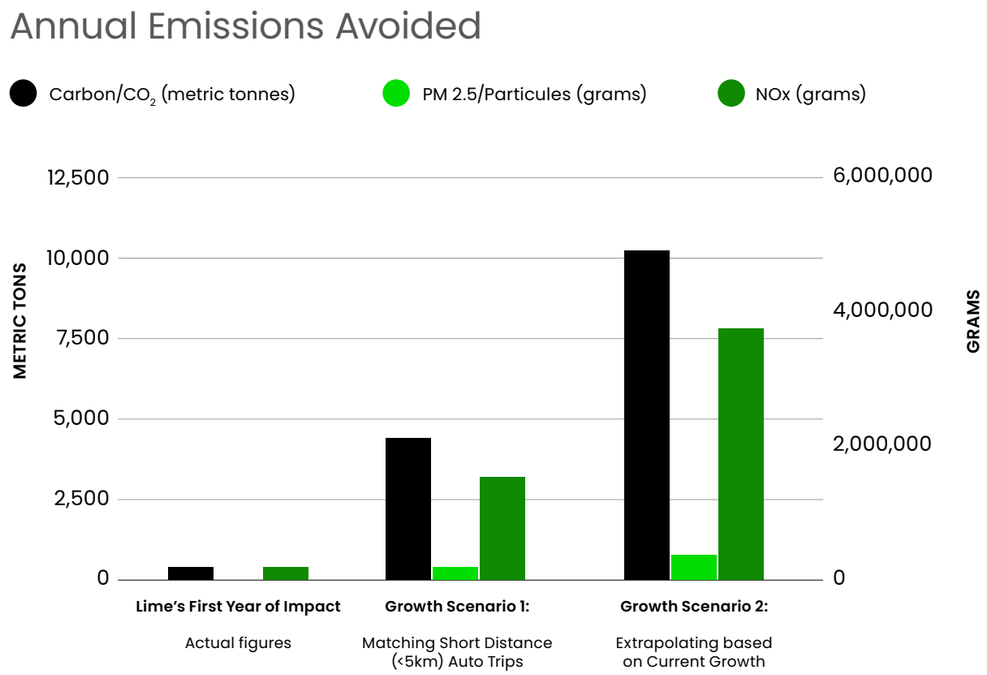
Growth Scenario 1:
Matching Short Distance (<5km) Auto Trips:

Assumes e-scooter trips match the 104 million <5 km automotive trips in the City every year, while motor vehicle mode shift increases by a half percent per year to 15% in 2030.

Growth Scenario 2:
Extending Current Growth

Uses existing ridership data from 2018 and 2019 to extrapolate a continued linear increase in Lime trips. Assumes motor vehicle mode shift increases by a half percent per year to 15% in 2030. This scenario equates to an 8% mode share for e-scooters in Paris in 2030; for comparison, 5% of trips in Paris are currently made by bike, with a goal to get to 15%.

Figure 3. Lime Potential Growth Scenarios



GHG Emissions in Paris

According to the Paris Climate Action Plan (2018), city-center transport is responsible for 1.3 million tonnes of CO_2 emissions, 24% of greenhouse gas (GHG) emissions, and 17% of all energy consumption in the Paris area. The City is planning to cut these emissions by 50% by 2030 and 100% by 2050.

The transport sector is the biggest source of local air pollutants, including nitrogen oxides (NOx), and $PM_{2.5}$ and PM_{10} fine particulate matter.

Powered by Renewable Energy

Like the City of Paris, Lime is investing in renewable energy. In January 2019, Lime became the first -- and remains the only -- electric e-scooter operator in France to partner with a local renewable-energy supplier, Planète OUI, to power all Lime-charged e-scooters and warehouse operations with 100% renewable power from local French-based wind, solar and small hydro projects.

Through this partnership with Planète OUI, Lime has purchased more than 163.5 MWh of clean, locally produced renewable energy, helping France decarbonize its electric portfolio and meet its 2030 goals of transitioning to a clean electrified transportation system.

Projects powering Lime's fleet, warehouses, and operations vehicles include three 100kW photovoltaic installations in Lyon, an 11.7MW wind facility in Tuchan, and a 2.4MW small-scale hydraulic project in Nice. For e-scooters not charged directly by Lime, the company buys verified Renewable Energy Certificates (Guarantees of Origin) to cover the electric demand of the balance of the e-scooter fleet.

Wind facility in Tuchan

Three photovoltaic projects in Lyon

Small hydroelectric project in Nice

Using Data For Sustainable Infrastructure Improvement

From day one, Lime has committed to sharing route data with cities to help support more sustainable, vibrant, and mobile communities. Lime has found that when city leaders and communities are equipped with transformative insights and data about e-scooter use, cities can better plan infrastructure improvements that support biking, scooting and pedestrian activity, and can invest in a future where cities are designed around people again, and cars no longer dominate our urban landscape.

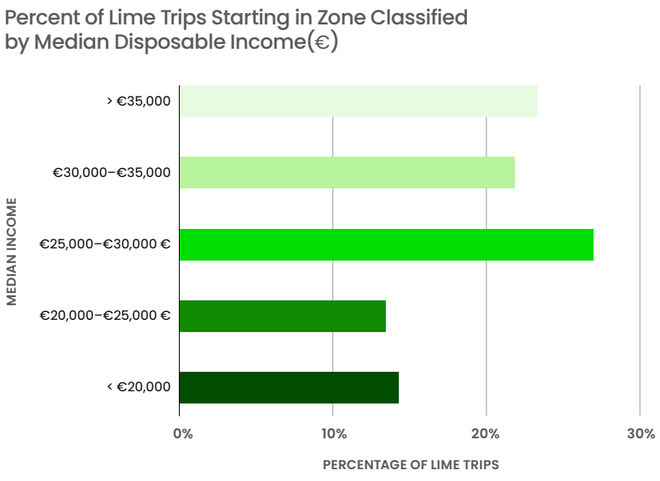
Paris is already doing this by building out their bike lane infrastructure. The Paris Bike Plan (2015-2020) envisions doubling the amount of bike lanes by 2020. The map in Figure 4 shows Lime's aggregate ridership data. Lime ridership shows that Paris has successfully moved people out of cars and onto bikes and scooters. For example, in Figure 4, Rue de Rivoli and Boulevard Sebastopol have recently had bike lanes installed, and these routes see some of Lime's highest ridership. A couple examples where high Lime ridership suggests protected micro-mobility travel lanes would be beneficial are Rue Saint-Lazare and Avenue de l'Opera, routes with shared bus and bike lanes.

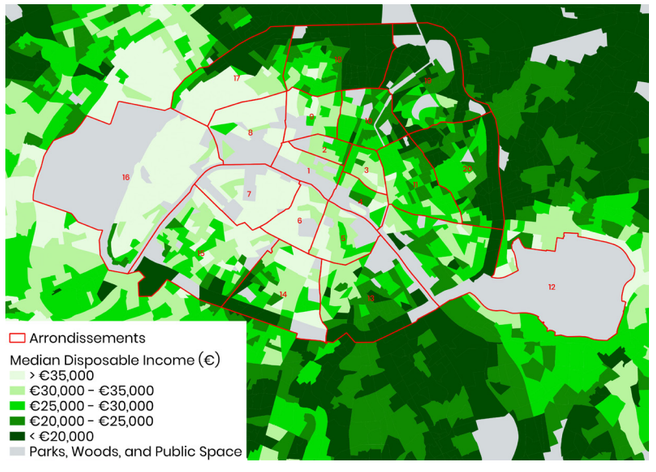
Figure 4.
Top e-scooter routes in Paris

Advancing Transit Equity for a Fairer, More Inclusive City

The use of e-scooters can support the City of Paris in creating more equitable access to transportation. More than half of Lime trips start in locations with a median disposable income of less than €30,000, demonstrating the equity impacts of having widely available transport options. The map and chart in Figure 5 show where Lime trips originate, with higher income zones in light green and lower income zones in dark green.

Figure 5. Distribution of Lime Trip Starts[19] vs. Lime Activity
6/13/19 - 6/19/19





> Lime embodies freedom for us Parisians Lime embodies this flexibility that is lacking to our current transportation system. Lime is the solution to the city's current challenges.
>
> –Mehdi, Paris 11eme arrondissement, June 2019, collected by Lime

19. Air Parif, 2018

Based on current ridership, data shows that Lime's e-scooters provide transportation service to many people who do not own a vehicle. According to a Sam Schwartz Consulting analysis of Lime ridership and Insee 2015 data, over 90% of Lime trips happen in the City's Arrondissements where less than 50% of households own vehicles. Lime ridership is strongest in areas with low vehicle ownership demonstrating how Lime complements a car-free lifestyle and future car-free Paris. This is illustrated in Figure 6.

Household Auto Ownership Compared to Lime Ridership

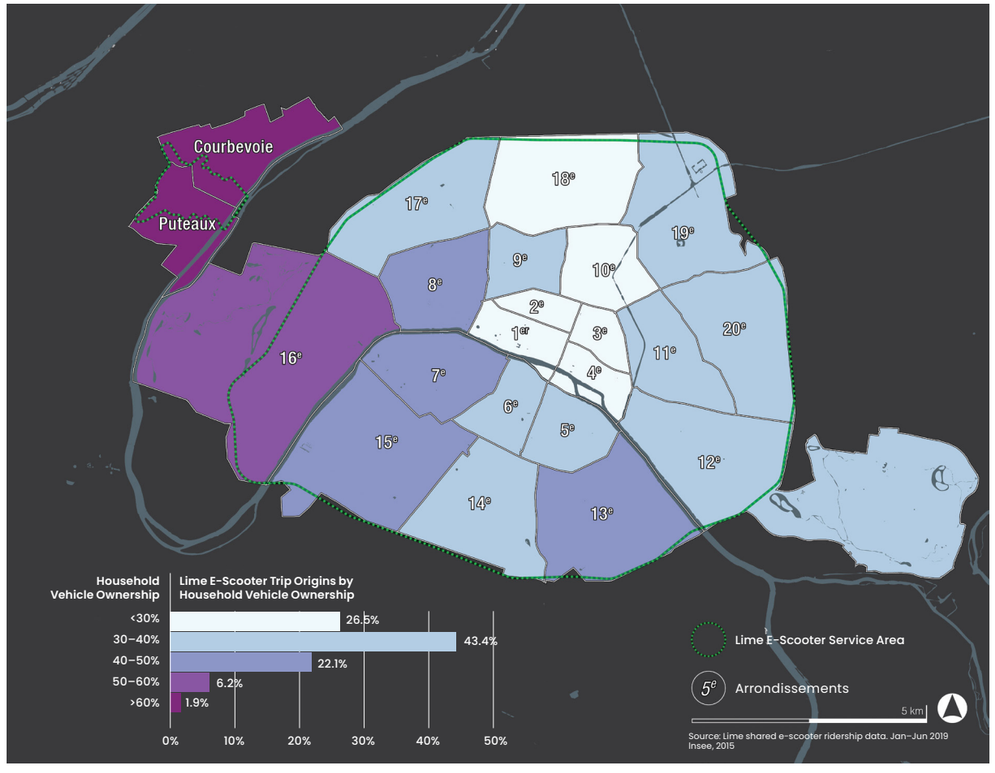


Figure 6. Household Auto Ownership Compared to Lime Ridership

Sustainability at Lime

Sustainability is a priority for Lime throughout the business. At just two years old, and in a rapidly changing transportation service, Lime is already deeply engaged on this journey. Lime is committed to continuous improvement in hardware design, vehicle repair and reuse, and operational efficiency to consistently improve environmental performance. Lime's industry leadership position allows the company to innovate and scale solutions quickly. The company's global footprint provides operational expertise and capacity for large-scale change throughout the product life cycle.

CREATE

Designed for Durability

Designed for durability and re-use, each generation of Lime scooter is more modular than the last. This means parts are easily transferrable, replaceable and recyclable, keeping on the road longer and out of landfills.

REPURPOSE

Improved Recyclability

We are constantly looking to improve the recycleability of our scooters, allowing used parts to be reintegrated into the maintenance process.

ENJOY

A Lime Lifetime

The next generation of Lime scooters will be on our roads for longer than the last.

Efficiently Powered

Powered by carbon free, 100% renewable electricicity.

Collection & Redistribution

Our disaggregated community approach to scooter collection creates economic opportunities, reduces congestion and increases efficient transportation.

Life Cycle Analysis

In 2019, Lime explored the impact of its e-scooters across the value chain through an initial life cycle analysis (LCA), and is expanding this work to a robust LCA consistent with international standards ISO 14040:2006 and ISO 14044:2006, which will be completed by the end of 2019.

Initial findings indicate that Lime can have the greatest impact on the sustainability of its products and services by: (1) continuing to strengthen the durability of e-scooters to extend their operational lifetime, (2) repairing and reusing scooter components to extend their useful life, (3) optimizing collection and redistribution of the fleet to reduce emissions, and (4) increasing mode shift. Lime is addressing these opportunities with initiatives for continual improvement.

Extending An E-scooter's Life

Based on insights from Lime's global operations and different rider use conditions, Lime has designed, manufactured, and deployed more than five different e-scooter versions over the last 18 months. With each design iteration, Lime has made hardware improvements to enhance the e-scooter's durability and increase the modularity of the e-scooter parts for easy repair. As a result of these changes, the e-scooter is expected to last for over a year, and parts can be reused to service other e-scooters.

Lime hardware engineers have spent weeks in the field with local operators to identify opportunities to make Lime's existing scooters more durable, more repairable, and more efficient in operations. The newest Generation 3 scooter has been designed with durability, modularity -- and Paris -- in mind; its performance in other markets around the globe suggest an operating life of more than a year. The introduction of larger wheels, larger batteries, and easily replaceable components have been key to its greater durability. By increasing the modularity of the components, Lime can more easily repair the scooter and use the parts to keep other scooters operating longer.

Swappable Batteries

Lime's first generations of e-scooters had batteries housed within the tube of the e-scooter; however, Lime is shifting to replaceable batteries within the baseboard, as can be seen in the new Gen 3 scooters currently being deployed in Paris. This allows the battery to live multiple lives in multiple generations of scooters.

The next iteration of the Gen 3 will have swappable batteries that will allow scooters to be recharged with a fully charged battery without travelling to and from a charging center every day. Each step of this progression generates significant operational efficiencies and is estimated to reduce collection and redistribution impacts by 40 to 60 percent. By only swapping out the battery for daily recharging, Lime operations vehicles will have less weight to carry, which will reduce the number of vehicle kilometers traveled, facilitate the usage of smaller electric vans or cargo bikes, and can usher in the adoption of centralized charging stations to further reduce vehicle kilometers traveled.

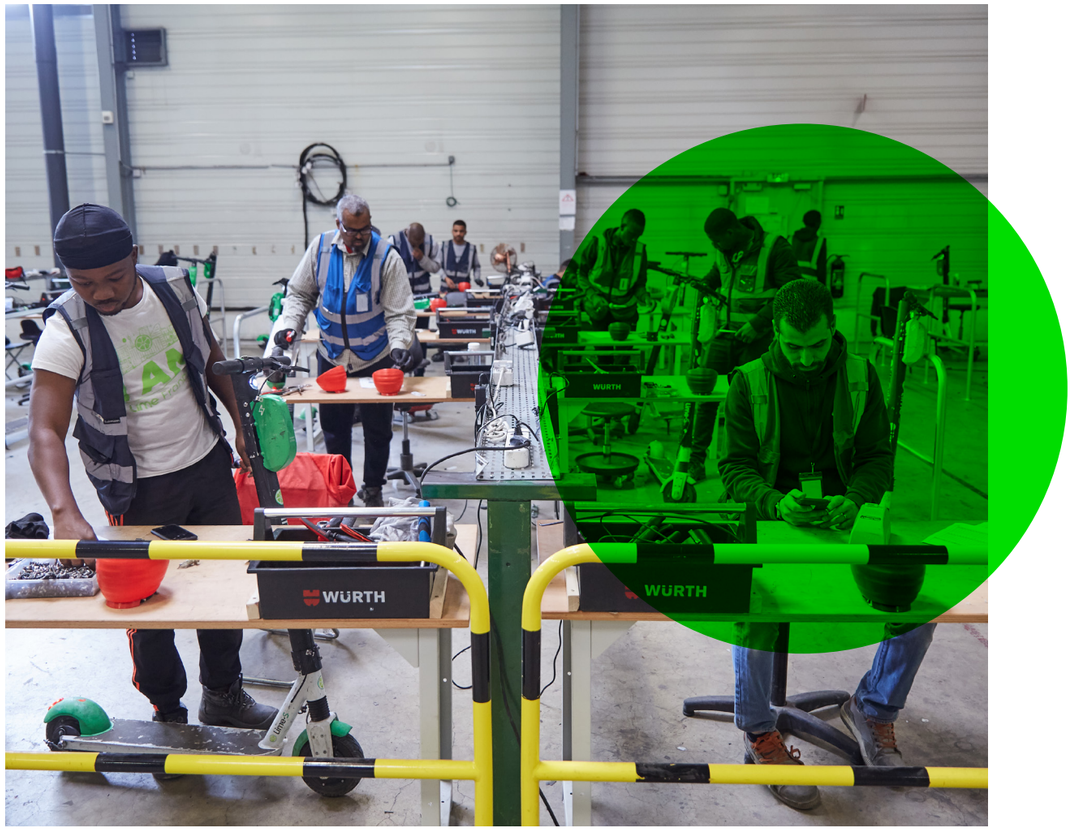
Repair and Reuse

Field Mechanics on cargo bikes perform routine checks and maintenance and checks on scooters directly in the streets, avoiding CO_2 emissions from transportation. With 200 mechanics and 24/7 operations, Lime's Paris service facility is the largest and most sophisticated e-scooter repair center in Europe, and is able to process over 2,000 scooters each day.

In this space, Lime is pioneering techniques to make the maintenance process more efficient, leading to increased scooter lifetime and lower environmental footprint. Lime's extensive maintenance, repair and reuse program in Paris focuses on getting scooters back into operation whenever possible. Mechanics are trained in Lime's commitment to improving sustainability of operations throughout the entire repair training process.

Every scooter that goes through Lime's Service Center doors is diagnosed and then brought to the repair area. Lime mechanics perform a nine-point preventive maintenance check each time they touch an e-scooter, ensuring maximum safety for users and allowing the team to detect any fatigue from equipment and proactively replace parts if necessary. Most maintenance operations will take under 15 minutes and consist of tightening breaks, fixing tail lights, damaged screens or bells. In most cases, damaged parts are replaced by refurbished parts, and after undergoing quality control, the e-scooter is ready to be deployed again.

All damaged parts end up on the testing benches of the Parts team, where they are diagnosed, refurbished and returned to inventory, ready to be reused and eliminating the need for new parts. This circular approach enables faster repair times, fewer new parts, and less waste. When an e-scooter is deemed beyond repair, it will be stripped down for parts with non-salvageable parts recycled. Once a component no longer has a useful life, it is recycled with qualified local recyclers, COMET and SNAM.



End of Life Recycling Practices

Both COMET and SNAM recycle Lime e-scooter parts in France certified to ISO 14001 standards. In 2019, Lime began pilot projects for e-scooter and battery recycling, respectively. Both pilots have exceeded the minimum recycling rate required by the EU of 85% for electrical vehicles and 50% for electrical batteries.

Comet is a leading Belgian and French service provider of electronic equipment and vehicle recycling. COMET's Weeelabex-certified recycling facility dismantles and sorts product components to shorten the recycling loop for valuable materials such as aluminium and plastic and has been successful in reaching a combined 97% recycling rate for Lime e-scooters. Currently, 93% of components are recycled into new materials. The remaining 7% are mainly composed of organic wastes which are processed for their energetic content through Comet's state of the art catalytic cracking process which converts solid wastes to liquid fuel and carbon-based reducing agents. The final remaining 3% are considered ultimate residues and are disposed of.

SNAM is a French-based battery recycling company specializing in portable, industrial, and electric vehicle batteries. SNAM's role as a partner in the recycling industry is a key link in the circular economy chain.

SNAM's recycling process deconstructs batteries into their metal components, using thermal treatment to remove all organics and distill remaining components into cobalt, copper, aluminium, nickel and iron. Metals are then sorted, purified and reinjected into the production of wire, stainless steel and ceramics, achieving a 95% recovery rate for metals, and a 70% recycling rate for the product overall. Remaining plastics and residual waste (only 2-4% of the product that cannot be recovered through recycling) are used for waste to energy.

The combined end of life processes bring Lime close to its 100% landfill diversion goals.

Reducing the Impact of Field Operations

As part of Lime's commitment to cleaner and more efficient operations vehicles for operations, Lime uses a small fleet of six cargo bikes for field maintenance, e-scooter retrieval, and light rebalancing. By 2020, Lime expects to have more than 10 cargo bikes in operation, reducing emissions by approximately 22 metric tons in their first year, and for operational tasks that require a vehicle, 100% of the vehicle fleet will be powered by local renewable energy.

Each day, dozens of Lime employees are working in the streets of Paris to ensure smooth and efficient operations. Lime's field teams (Operations Specialists, Field Mechanics, and Urban Patrollers) assist users, maintain e-scooters, ensure appropriate parking, and respond to requests from users, non-users, and city stakeholders.

The Operations Control Center coordinates the team's activities to enable faster response times, increase the quality of service, and reduce Lime's environmental impact through more efficient operations. The company's data science team is consistently advancing ways to optimize collection and redistribution.

Carbon-neutral Vehicle Fleet

Currently, to neutralize vehicle emissions that can't be eliminated, Lime invests in verified carbon offsets through a partnership with NativeEnergy to ensure a fully carbon-neutral fleet of Lime-operated vehicles globally. Offset projects include a Gold Standard community water filtration project in Ethiopia (designed to follow UNFCCC protocol for low greenhouse gas emitting water purification systems), and a commercial wind facility in the USA, certified by the Verified Carbon Standard (VCS).

380

New jobs

Employment

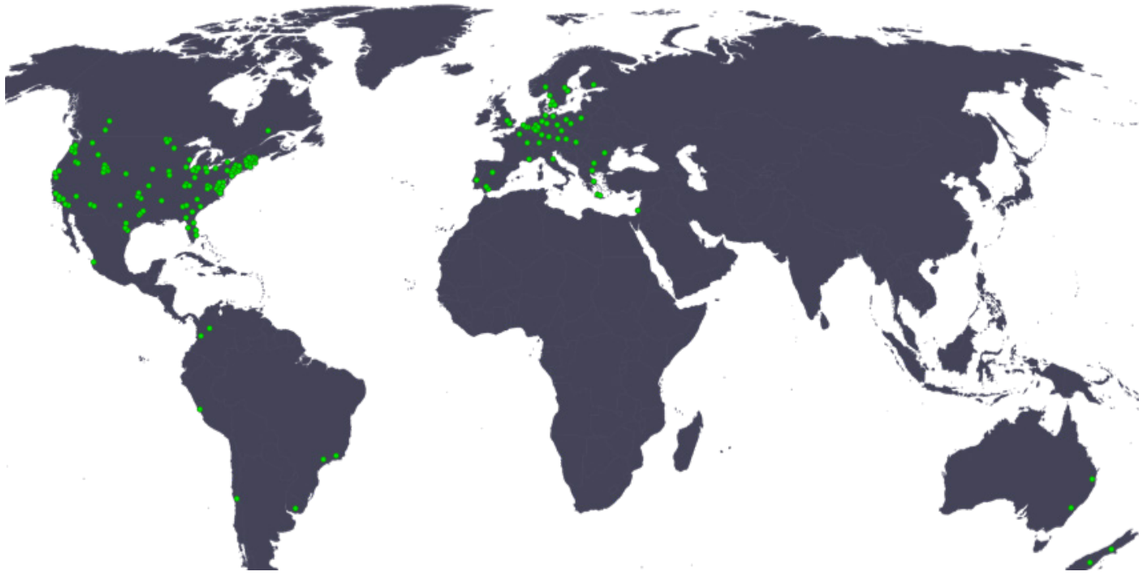
The boom in electric personal vehicles has not been matched by an increase in skilled technicians and mechanics. Lime addressed this shortage by recruiting team members who have an extensive mechanical background in the automotive sector, others with bicycle, phone, or mechanical repair experience, and others who are totally new to the industry and receive extensive training through Lime's in-house training and development program. Lime mechanics gain unique technical knowledge on electric vehicle maintenance. Since 2018, Lime's activities have resulted in the creation of 380 net new jobs in Paris.

Conclusion

By supporting mode shift from cars, connecting Parisians to public transit, and supporting the City's goal for more sustainable transport modes, Lime sees its clean, renewably-charged service as a transportation mode of the future, in Paris and beyond.

It is fitting that the company's largest market in the world is Paris, a city which has laid down an ambitious global leadership marker for sustainability and carbon neutrality. As the City's action plan cites, the path toward resilient, inclusive, carbon-neutral and 100% renewable energy city by 2050 will require a myriad of solutions, transforming how the City functions.

The Lime team has worked alongside city officials to address the emerging opportunities of a shared, electrified transportation service, and looks forward to building upon a strong relationship with the City and its citizens for many years to come in a shared aspiration for a more sustainable and livable city which can be a beacon for the world.



About Lime

Lime was founded in 2017 on a simple idea that all communities deserve access to sustainable, reliable, and affordable mobility options. Through access to shared e-scooters, bikes, and other vehicles, Lime aims to reduce dependence on personal automobiles for short-distance transportation, fostering cleaner, more connected cities. Our mission is to reimagine urban life through the wonder of mobility.

Lime is the world's largest and most experienced micro-mobility company serving more than 125 cities, in over 25 countries, across five continents, including Paris and Lyon in France. Lime's riders have now taken more than 100 million trips worldwide, and over 12 million rides in Paris since the e-scooter service began in June 2018 through September 2019. The company's strong financial foundation and blue-chip backing allows Lime to invest in constantly improving our products and services, and make long-term commitments to our sustainability initiatives.

Research and Report Support

Sam Schwartz

Sam Schwartz is a leading transportation planning, engineering, and analytics firm working at the intersection of mobility with equity, sustainability, and climate action. Through technical expertise, creative visioning, and consensus-building, Sam Schwartz solves complex urban transportation challenges for government, private-sector, and not-for-profit clients across the world. www.samschwartz.com

Anthesis

Anthesis is a specialist global sustainability services and solutions provider founded on the belief that sustainable business practices are at the heart of long-term commercial success.Anthesis develops financially-driven, corporate sustainability strategy, underpinned by technical experience and delivered by true innovation and collaboration and have supported Lime with life cycle analysis. www.anthesisgroup.com

native energy

Since 2000, NativeEnergy, a Public Benefit Corporation and certified B Corp, has worked with hundreds of organizations to implement community-scale projects that reduce greenhouse gas emissions around the world. www.nativeenergy.com

planète OUI

Founded in 2007, Planète OUI is a pioneer in the supply of 100% green electricity. Their goal is to accelerate the development of renewable energies. Planète OUI works directly with french energy producers to meet the customers consumption. www.planete-oui.fr

OCTOBER 2019