



Kaohsiung
1-31 October

EcoMobility World Festival 2017

Hosted by:



Kaohsiung City



EcoMobility World
Festival 2017
1 - 31 October
Kaohsiung

One neighbourhood, one month,
ecomobile

Presented by:

I.C.L.E.I
Local
Governments
for Sustainability

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Forewords

During the month of October 2017, Kaohsiung took a big step towards creating a safer, healthier, and more livable city for its residents. To accomplish this, we intensified our efforts to create a sustainable urban transport system that prioritizes people over cars, provides air quality benefits, and focuses on providing mobility in ways that have a positive effect on the quality of life for all Kaohsiung residents and visitors to our beautiful city.

As the host of the **EcoMobility World Festival** held from 1-31 October 2017, Kaohsiung was able to demonstrate the progress we have made through our ambitious development of a public transport network which includes a range of modalities including *Metro Rail Transit (MRT)*, *Light Rail Transit (LRT)*, bus system, demand responsive transport, along with a popular public bike sharing system. In addition to these network improvements, the month-long Festival highlighted our ongoing efforts to shift towards ecomobile transportation while entertaining residents and visitors to the Festival with over 150 cultural events, performances, and weekend night markets.

I am proud to say that with strategic partnership and diligent efforts of the city's staff, Kaohsiung's progress towards a more ecomobile city can serve as a model for other cities in Asia and throughout the world. EcoMobility is a global cause. Let us all rise to the occasion.



Chen Chu

Mayor of Kaohsiung and Chair of the EcoMobility Alliance

ICLEI congratulates Kaohsiung and its dedicated team on a successful EcoMobility World Festival and Congress 2017.

As the Chair of the ICLEI EcoMobility Alliance, Mayor Chen Chu of Kaohsiung is working with ICLEI and a group of pioneering cities from around the world to promote sustainable urban transport and transform the way people move within their urban environments. By hosting this Festival, the city accelerated their efforts to advance towards an ecomobile city by giving residents the opportunity to test sustainable forms of transport and preview what Kaohsiung could achieve through their continuing efforts to reshape its mobility culture.

To inspire and guide cities on their own path towards a more ecomobile future, ICLEI and the City of Kaohsiung released “The Kaohsiung Strategies for the Future of Urban Mobility” at the EcoMobility World Congress. These strategies are based on “The 10 Shared Mobility Principles for Livable Cities”, developed by thought leaders and innovators in urban transport.

ICLEI also presented the Kaohsiung Strategies at the 23rd United Nations Climate Change Conference (COP23) that took place in November 2017 in Bonn, Germany, to show how sustainable urban mobility can advance the global climate agenda.

As initiators of EcoMobility World Festivals, we at ICLEI hope that more passionate city leaders will join in the EcoMobility movement.



Gino Van Begin

Secretary General

ICLEI – Local Governments for Sustainability

Why EcoMobility?

Sustainable, accessible mobility is at the core of a healthy, modern city, allowing communities to function and thrive. Today, our cities are experiencing unprecedented levels of automobile traffic that is polluting the air, raising urban emissions and making travel increasingly inefficient, frustrating, and time consuming. Even when cars are not in use, they occupy precious urban space which could have allowed other social interactions. In order to create more sustainable urban environments, a paradigm shift is needed: urban mobility systems must move from a car-centered to a people centered design.







By enabling communities and organizations to access goods, services, and information in a sustainable manner, ecomobility supports residents' quality of life, increases travel choices, allows for use of public spaces and promotes social cohesion.

A mobility system designed through an ecomobile approach produces numerous benefits compared to car-centric mobility models.

Ecomobility gives priority to walking, cycling, shared and public transport. It promotes travel through integrated, socially inclusive, and environmentally-friendly transport options without depending on privately owned vehicles.

Realities

Car-centric mobility

-  More than 50% of transport CO2 emissions globally come from urban transport.
-  Every minute, 2.23 persons die from road accidents in cities worldwide.
-  Given the nature of daily trips in urban areas, cars are parked for 95 percent of the day.
-  Most cars require more than two parking spaces – at home, offices, shopping areas and other non-work related locations.
-  An average motorist spends an estimated 2,549 hours (approximately 15 weeks) of their life searching for a place to park a car.
-  A typical fossil-fuel driven car has 12 to 35 times the weight of its driver which requires significant use of energy.

Ecomobility

-  Residents in high-density neighborhoods with mixed use transport options are less car-dependent and have about a fifth of the per capita traffic fatalities compared to their car-centered counterparts.
-  Public transport has reduced per-mile traffic injury and deaths by a tenth in comparison to trips made in cars.
-  Public transport users enjoy wellbeing, life satisfaction and productivity at work.
-  Car sharing schemes have reduced car ownership - for each shared car added to the fleet, 5 to 15 cars have been replaced.
-  Public park opportunities have been created through a reduction in parking. A 47 space surface-parking facility the size of a football field could become a public park.
-  A bicycle is 1/5 the weight of the average rider and is 60 to 175 times more energy and material efficient than cars and motorcycles that use fossil fuels as an energy source.

Approach

Traditional car-centric approach

-  Traffic-centered, prioritizing road vehicles.
-  Primary mobility is through personal vehicle ownership.
-  Cities have a wide range of vehicle sizes, predominantly made up of large cars (e.g. SUVs).
-  Road networks are used almost exclusively by automobiles.
-  Cities make investments in infrastructure that meets peak traffic conditions which is both expensive and space consuming.
-  Mobility is focused on moving the maximum number of vehicles.
-  Transportation planning goals are aimed at reducing travel time for automobiles.
-  Separate facilities are available for single purposes, either for automobiles or pedestrians and cyclists.

Ecomobility approach

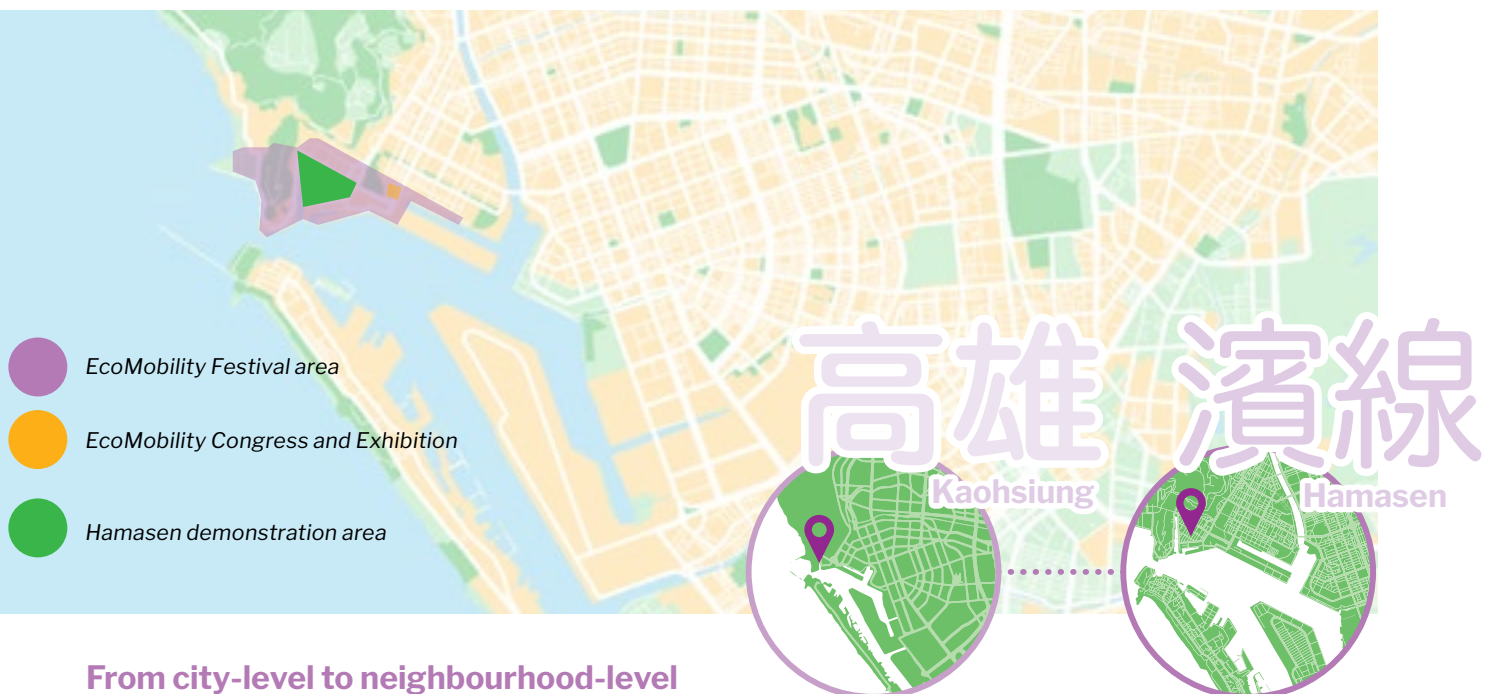
-  People-centered, prioritizing livability for residents.
-  Primary mobility is through multi-modal transportation that prioritizes active mobility, public transport, and shared mobility infrastructure and services.
-  Cities prioritize smaller cars.
-  Roads are considered to be public spaces that have multiple uses.
-  Cities invest in infrastructure that is scaled down and is compatible with places for people to live, work, and play.
-  Mobility is focused on ways to move the maximum number of people.
-  Transportation planning goals are focused on providing quality, safe, livable and affordable mobility options for all city residents.
-  Facilities are multi-purpose, aiming to integrate people and connect communities.

Reorienting the city to its people

“One neighbourhood, one month, ecomobile”

An *EcoMobility World Festival* is a living lab to show how cities can employ an ecomobile approach within a neighborhood and community and take a bold step to create a forward-thinking urban transportation culture. The Festival is a *mise-en-scène* of the future of urban mobility in a real city, with real people, in real time. Previous EcoMobility Festivals have taken place in Suwon, South Korea and Johannesburg, South Africa each with their own challenges and successes. In 2017, together with ICLEI, Kaohsiung hosted the third EcoMobility World Festival.

Home to 2.7 million inhabitants and one of the busiest ports in the world, Kaohsiung has transformed itself from an industrial and shipping hub to a modern city with a world class economy. Today, the city has a thriving service industry and business climate. The Kaohsiung City government is investing heavily in the future with the goal of becoming a more livable city and sustainable mobility is at the forefront of their transition. Although the city has been investing in public transport infrastructure such as the MRT and LRT, usage of such system is low in comparison to other similar-sized cities. This is largely attributed to the prevalence of motorcycles which are still considered the easiest mode of transport in the city and represent 61.5 percent of the modal split. Residents also lodged complaints about the state of transport in the city. For instance, the residents of Hamasen were disturbed by the high volume of tourist buses entering the neighborhood to visit Cijin Island and staged a protest, calling on the city to improve urban mobility. These factors contributed to the city's determination to invest in ecomobility and increase the livability of the city.



From city-level to neighbourhood-level

Against this background, the city embraced the concept of the Festival to catalyze change on a neighborhood-level. Hamasen, an urban area reclaimed from the sea by the Japanese during the colonial period, symbolizes the start of Kaohsiung's modernization. Fast forward to present time, the historical Hamasen has lost its former prominence and glory. The neighborhood is characterized by two- to four-story buildings with narrow streets. Each building consists of a shop or workshop on the ground floor with residential units above that are inhabited mostly by elderly residents and students of nearby National Sun Yat-Sen University. The neighborhood has been experiencing poor air quality due to increasing motorization, mainly attributed by motorcycle, car and ferry emissions. The strategic selection of this neighborhood allowed on-going conversations among engaged residents and key stakeholders to continue while presenting opportunities for urban regeneration and rediscover the hidden gems of its forgotten past.



3,750

Residents



1,100

Households



1,000

Blocks of
buildings



1,100

Cars



2,500

Fossil-fueled
motorcycles



One Festival, four elements



Hamasen ecomobile neighbourhood

A month-long demonstration of ecomobility in the historical Hamasen neighborhood aimed to improve livability through Decarbonizing, Decreasing speed, and Downsizing vehicles (“the 3D Policy”).

7.5

Metric tons of average daily CO2 emissions reduced

1,793

Hamasen Honorary EcoMobility Festival Ambassadors

5

Transport service packages (Free iPass for public transport, free parking spot, free logistic service, free shuttle, and free vehicle rental)

144

Electric bicycles sold, representing

7.7%

of the city (highest number electric bicycles sold)



Local cultural activities

Warm-up events (e.g. Christmas markets), concerts, cultural performances, parades and the weekly night markets attracted the young and old. Sounds of laughter, chatter in diverse languages and the aroma of tantalizing street foods filled the air as visitors gathered and occupied the street space, showing an entirely different type of use for the otherwise car-lined roads.

376

Festival events

300,000

Visitors

150

Volunteers

5

Ceremonies

2

Ecomobility parades

3

Competitions

15

Street concerts

76

Street theater performances

11

Street markets on holidays

359

Hamasen ecomobility and cultural tours

7,000

Ecomobility parades

10

Other events (fashion show etc)



EcoMobility Exhibition

Indoor and outdoor exhibitions showcased various innovative and unique ecomobile alternatives to the conventional car centered model of urban transport including the light rail system and an autonomous shuttle.

1

Month

90,000

Exhibition visitors

38

Number of vehicles showcased

55

Companies

61

Partners

20

Sponsors

1

Special Exhibition



EcoMobility World Congress

The three-day EcoMobility World Congress 2017 brought together city leaders, technical experts, business leaders, and representatives from research institutions and international organizations to share ways that sustainable mobility can be ‘Livable, Shared, and Intelligent’. In addition to the 22 Congress sessions, city leaders also participated in the Mayors’ Track which featured roundtable discussions and the Mayors’ EcoMobility Ride.

1,200

Congress participants

43

Countries

53

City representatives

37

Mayors, vice mayors, and heads of transport

26

Endorsing partners

4

Keynote speakers

81

Speakers

3

Post-Congress workshops/technical tour

Investment package:



3 billion TWD (approx. USD 100 million) on neighbourhood improvement.



5 billion TWD (approx. USD 170 million) on massive regeneration of the area and mobility system

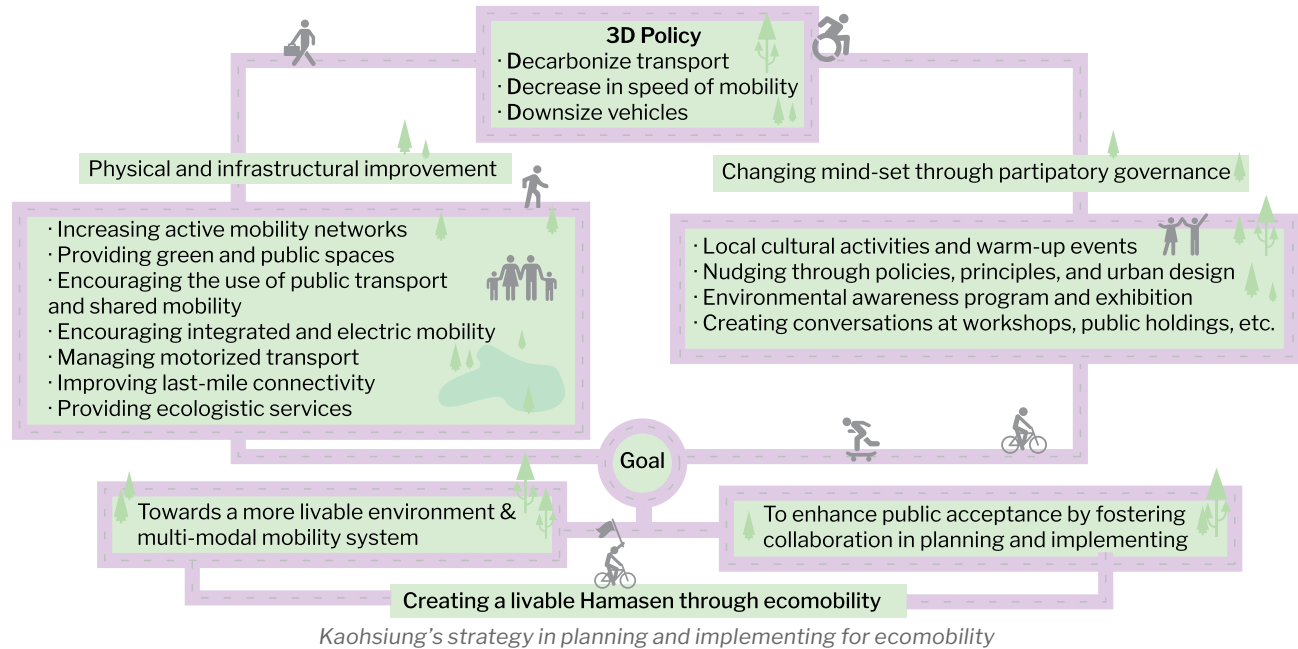


26 million TWD (approx. USD 7.1 million) on electric scooters and bikes subsidy

A neighbourhood with character

From vision to reality: the strategy and organization for the Festival

In order to reach the goal of creating a livable Hamasen through ecomobility, the city set a “3D Policy” as an overarching guide. This involved changing the mindset and behavior of the residents while improving the physical environment and infrastructure of the neighborhood. As shown below, a variety of measures, plans, activities and working groups were formed under this umbrella to plan and execute an ecomobile Hamasen.



Engaging the community

A vision for ecomobility requires on-going strong institutional support and governance during the transition that acknowledges the importance of participatory engagement from members of the community. Institutions are not only the city bureaus, but also include grassroots organizations, residents, and businesses. When the city first announced the one-month Festival concept, the residents reacted with strong and fierce opposition as it was hard to imagine how life would be without cars. This reaction was of course not unexpected. To address resident concerns, twenty-two months before the Festival, the city embarked on a journey of public engagement to explain the Festival concept and objectives and obtain input on potential problems or concerns of residents and businesses. Through door-to-door visits, public meetings, surveys and meetings with community leaders, the city was able to continuously address any issues or concerns.

Through a series of trial-and-error, the city established an Ambassador Advisory group that was initially made up of 182 trained individuals from different walks of life, including primary school students, temple representatives, business owners, and others to serve as ambassadors of the Festival. Once the ambassadors began spreading the Festival messages within their network, the ambassador group increased to 1,793 individuals. Beginning in December 2016, various warm-up events such as Christmas Markets and electric scooter test-rides were organized to give locals a taste of the upcoming Festival and to build confidence with the local business community that the Festival would not adversely affect their business. Such warm-up events resulted in approximately a 40 percent increase in MRT ridership and a 50 percent growth in revenue for local businesses.

This public engagement has influenced and defined the city's plans especially in the planning of physical and infrastructure improvements. Although this was unquestionably a challenging task that demanded compromises and negotiations, it was a pivotal exercise to encourage interactive discussions, rather than imposing through legal instruments.





Urban regeneration for a socially-inclusive Hamasen

A physical facelift for the neighborhood was essential in anticipation of the Festival. Such improvements reflected residents' changing sentiments and served as a visual milestone to gain further buy-in for skeptical residents.

One of the oldest neighborhoods in the city, Hamasen is known for its aging buildings, messy telecommunication cables, and elderly population. The large number of poorly parked motorcycles and discontinuous building arcades made it difficult for the elderly and disabled to move along the sidewalk corridors, thus limiting movement of these vulnerable populations. The city refurbished some of the building façades, leveled the building arcade, repaved small alleys with brick materials, and created pockets of public spaces such as a basketball court. Extensive upgrades such as replacing sewage lines and burying overhead cables were also implemented throughout the neighborhood. Ecomobility-themed artwork was displayed at reclaimed green spaces, spicing up the otherwise bland aesthetics. In addition, five air quality measurement devices and live air quality reporting systems were installed.

Strategy for a connected and ecomobile Hamasen

On the eve of the Festival, the city was uncertain if the streets would indeed be free of cars for the first day of the Festival. Despite the air of uncertainty, about 500 cars were removed to temporary parking spots giving free reign for residents to explore other ecomobile options, albeit at a decreasing rate as the weeks passed. At the turn of the clock to October 2017, Hamasen neighborhood was ready for the month-long Festival. Traffic control was instituted at dedicated entry/exit points to keep vehicles from entering the neighborhood while some registered scooters were allowed to enter the neighborhood, as a compromise made due to strong pressure from the local residents. Nonetheless, Kaohsiung made every effort to minimize disruptions to the daily life of the residents and businesses without losing the spirit of ecomobility i.e. prioritizing walking, cycling, use of public transport and light or shared electric vehicles.

As such, a variety of measures and investment packages were established to nudge residents to opt for more ecomobile measures than driving their cars inside the neighborhood.

Expanding active mobility networks	Encouraging integrated mobility services and e-mobility	Encouraging the use of public transport	Improving last mile connectivity	Managing motorized transport	Providing ecologistics services	Measures
<ul style="list-style-type: none"> 0.6 km of pedestrian walkway demarcated 8 new bike-sharing stations established Free bike (400 bicycles) and e-scooter (110) rental services Reduced speed limit of vehicles to 30 km/hr 	<ul style="list-style-type: none"> 3,800 iPass, an integrated card system which allowed users to use all forms of public transportation, were provided for free for all local residents Subsidies were offered for Hamasen residents to purchase/ swap to electric scooters and bikes E-car sharing system were piloted, the first in the city Police Bureau used e-scooter 	<ul style="list-style-type: none"> Commenced a new LRT line All public transportation system can be reached with iPass including ferry, electric buses, etc. Three electric buses with two dedicated lines were provided to shuttle and connect residents from Hamasen to other parts of Kaohsiung 	<ul style="list-style-type: none"> Residents and visitors can hail down the 2 velotaxis to shuttle passengers from the neighbourhood to/ from the entrance/ exit point Designated trips to school and hospital were provided 24-hour taxi service was provided to local residents for emergency cases 	<ul style="list-style-type: none"> 11 free parking lots were developed for residents to park their cars (569 spots) or motorcycles (100 spots) which were 3 to 5 minute walk to their home 	<ul style="list-style-type: none"> 2 ecologistics center were set up to deliver goods within Hamasen with e-bikes 	Description
<ul style="list-style-type: none"> 50% increase on satisfaction in walkways 5,200 users of the free bike and e-scooter services 27% increase in bike sharing users 	<ul style="list-style-type: none"> 60,000 trips with iPass 308 electric scooters purchased from baseline of 0 179 fossil-based scooters swapped from baseline of 0 	<p>Significant increase of public transport ridership:</p> <ul style="list-style-type: none"> MRT: +60% LRT: +118% Bus: +15% Taxi: +29% Others (e.g. shuttle): <p>Increase of 615 people/ time compared to 51 people/time (pre-Festival), increase of 12 fold</p>	<ul style="list-style-type: none"> 3,035 trips made servicing 19,520 passengers 78 emergency services for 269 people 885 trips to school with 2,415 students 204 trips to hospital with 156 passengers 	<ul style="list-style-type: none"> 881 car parking permits issued 85% of cars were parked outside of the Festival area 	<ul style="list-style-type: none"> More than 30 trips made per day More than 40 businesses used this service 	Impacts



Moving with style: Impressions from the Festival



"The Festival has attracted many visitors to Hamasen. While it was harder for the elderly to adjust, it is easier for young people to accept and cooperate. I hope that the city will focus on the younger generation and expand this to other parts of Kaohsiung."

Anonymous, Shopkeeper, Hamasen resident

Before:

After:



After the redevelopment of Hamasen, remarkable improvements can be felt: cleaner air for us to breathe while walking on the street; more convenient transportation system with the new LRT and City Bike. This area felt like a dead town but right now, streets have come alive with events and new shops.

Lu Shu Hua, Student, Hamasen resident





"It's rare to see streets in such pleasant conditions. The streets have become wider. With the newly-paved walkways, we can now walk on the streets in a relaxed way. We no longer have to pay attention to scooters that go into and out of the arcades. We no longer have to fear being hit by cars."

Ms Liu and Ms Wu, Retirees and Kaohsiung residents



"We were a bit disappointed to see cars and scooters still move around on the streets. However, the streets have really become neater."

Ms. Chou and Ms. Huang, University students, Kaohsiung residents



"I cannot move freely but I came with my son-in-law to Hamasen after hearing the activities held here. With no cars on the streets, it is very convenient for me to move around in the area"

Ms. Lan, Kaohsiung resident



Vehicles, visitors and vibe

The EcoMobility World Festival 2017 attracted more than 300,000 visitors to the Hamasen neighborhood. Excited and curious visitors strolled through the entire Hamasen neighborhood adding to the sense of festivity. Visitors to the neighborhood came across bamboo stands telling the transformation story of the Hamasen and some encountered unusual bikes including velotaxis and electric scooters. 364 tours/study missions with 7,000 participants were conducted to introduce the neighborhood and how ecomobility was embedded into a neighborhood. Visitors also experienced over 150 cultural events and performances and participated in organized traditional weekend night markets. To add to benefits for local businesses, a coupon scheme totaling 1,374 USD (40,200 TWD) in value was adopted by local shops to stimulate business activity.

The EcoMobility Expo featured both indoor and outdoor exhibitions and a test-ride track that proved to be popular with Festival visitors attracting more than 50,000 people. The autonomous shuttle was especially popular with long queues of people eager to ride in a driverless vehicle. The newly commenced state of the art wireless tram (or LRT) attracted crowds of excited and curious commuters, families, and disabled persons. Segways, e-scooters, e-cars, e-bikes, and bicycles of various sizes and shapes were available for test-rides, allowing visitors to obtain first-hand experience of the future of urban mobility that presents alternatives to fossil-fuel driven cars and motorcycles.



EcoMobility World Congress 2017: Livable, Shared, Intelligent

The Congress theme - Livable, Shared, Intelligent - became a red thread as speakers and participants deliberated and reshaped their understandings of transport, focusing on people-centered mobility - and ways to promote shared transport options and effectively managed new, more intelligent technologies.

Mobility for all

A livable city needs accessible transport for all populations including children and vulnerable populations such as the elderly and disabled. Suwon¹, South Korea aims to make public transport and public spaces increasingly accessible for children, disabled and elderly populations. Kumamoto, Japan has created a compact city where services have been concentrated in the city center to best serve their aging population. To enable mobility, residential development is encouraged near multi-modal public transit hubs. Boston, USA, upgraded its bus stops to smart bus stops to cater to the blind and the disabled. Medellin¹, Colombia, installed cable cars to connect marginalized communities living in outlying hillside areas to the city center.

These measures altered the inclusion landscape by engaging the elderly into the community and the marginalized into the workforce.

¹ EcoMobility Alliance City

‘While we are discussing ecomobility for our city, it is also important to talk about the mobility for our people. If our people are not mobile, you will find that they cannot benefit from all the services the city provides. We need to make sure our people can walk. The ability to walk especially for an aging population is critical so this is an area Singapore is focusing on: to encourage them to walk, strengthen their legs.’

Teo Ho-Pin, Mayor, Northwest district, Singapore



Active mobility

After being displaced by cars, active forms of travel are making their way back to cities all around the world. Although today the Dutch are known for their love for bicycles, they too saw decades of a car dominated existence. It has only been since the 1960s that the city changed its planning paradigm from being car-centric to people-centric. In **Utrecht**, Netherlands, a narrative of “healthy urban living” influenced all levels of the city planning. Today, the city boasts having the largest bicycle parking garage in the world. **Taipei** has one of the most successful bike sharing programs due to a revamped system in 2012 that introduced a user-friendly public transport card, EasyCard, and subsidizing part of the trip fare. Changing driving behavior of the locals to be more considerate to cyclists was challenging. The city addressed this by improving urban bikeway designs, relocating the bikeway in some areas and widening streets to safely accommodate cyclists. Additionally, a Traffic Improvement Program was implemented by slicing 456 villages into neighborhood to allow for customized solutions to improve the walking and biking environment. Significant benefits were achieved as accidents were reduced by 75 to 100 percent with 172% of user satisfaction. These accomplishments were shaped by a series of urban designs and policies that nudged people into good behavior.

“Walking is the oxygenated vein in our cities.”

Bronwen Thornton,
Development Director of
Walk21, Canada



“Tomorrow’s cities will have environmentally-friendly mobility, low noise, green spaces, compact housing and mixed-use districts, achieved by fewer private cars, no parking, greenery, compact housing and city of short distances.”

Tim Shubert, German
Environmental Agency (UBA),
Germany



Planning for tomorrow’s cities

An ecomobile city is intertwined with urban design and landuse. **Guangzhou** is leading the way in China in terms of Transit Oriented Development (TOD) as it has 71 transit hubs. The city is divided into central, residential and industrial hubs. By managing spaces and creating a more integrated mobility system, the results are apparent i.e. increased of walking space (42%), reduced walking distance (40%), and increased cycling space (1 meter). In **Kyoto**, Japan widened 88 walkways without constructing additional road spaces for cars. One of the streets, Shijodori, showed a reduction in traffic flow by 40 percent and 10-20 percent in arterial streets without any influence on traffic congestion nearby, while the walking environment improved significantly. This project has a long-term goal of introducing a transit mall. Similar approaches was also adopted; **Boulder**², USA (a 15-minute neighbourhood); and **Melbourne**, Australia (roads as parks).

Clean transport

A livable city is not possible without reconsidering how the city is fueled. As technology evolves, cities and businesses are rethinking how to transition to cleaner mobility systems. **Portland**² is the first USA city to create a local action plan for cutting carbon. Their strategies include instituting an inclusionary housing policy as an upstream intervention to lessen the demand for car trips and electrifying their transportation system.

Changwon² is a “Pioneering city of Electric Cars” in South Korea. Since 2015, it has the most number of hydrogen fueled cars in the country. Although it already reduced 28 tons of CO2 in 2017, the city aims to reduce emissions even more by expanding the charging facility network. In **Auckland**, New Zealand, electrification of the rail network is saving up to 9 million liters of diesel each year. In addition to increasing the number of electric cars and reducing the number of fossil-fueled cars, the city is rethinking the optimal size and design of a cars to ensure the most efficient and economic use of fuel. Similar clean transport transitions are also catching up in the developing world. **Ludhiana**, India set an ambitious goal of phasing out subsidies for diesel fuel and electrifying all rickshaws by 2025. **Almada**², Portugal and **Beijing**, China reduced freight emissions by optimizing logistics operations.

“Combining energy transition with mobility transition creates huge opportunities. The solution will be different in different cities and countries but combining them will bring you further and speed it up quickly.”

Robin Berg, LomboXNet,
Netherlands



Innovation and reverse innovation for sustainable mobility

Smart city goes beyond technology but a combination of intelligent policies and practices for a more holistic approach. The role of government is pivotal in creating an enabling environment that supports innovation by embracing a regulatory framework for transportation companies to thrive in while meeting the city’s goals. **Nairobi**, Kenya created the first digital map for the informal transit network for free public use. **Jakarta**, Indonesia, adopted a “Three-persons-in-one-car” policy” and an “Odd-and-even license plate” policy” to control cars in the Central Business District. **Busan**, South Korea, used ITS to improve public transport services (such as the Happy Bus Project and Intersection Traffic Management System). In five years, traffic deaths were reduced by 30 percent while public transport ridership increased by 1.2 percent. Innovations in the developing world are being transferred to the developed world (reverse innovation). For example, in **China**, the popularity of shared rides far exceeds levels of in other countries. In the second quarter of 2017, shared rides exceeded 1 billion km and the bike sharing industry contributed to 1 percent of the new urban employment. One of China’s homegrown companies, Ofo has exported bike sharing businesses to 250 cities in 20 countries.

“We are harnessing the power of new transportation technology so we can achieve environmental safety and mobility goals. We want Portland to be a city that welcomes transport innovators and give them an incentive to work with us to achieve larger policy objective.”

Leah Treat, Director of Bureau of
Transportation, Portland, USA

² EcoMobility Alliance City

The real cost of transport

Each car in Germany is subsidized by the general population at a rate of 2,505 USD/annum (excluding infrastructure costs). This exorbitant figure reflects that while transport users pay for time costs, vehicle and vehicle operation costs, public transport fares, and private accident costs; a larger unseen amount of social cost is externalized and paid by the society through general taxes for infrastructure, pollution-induced health costs, congestion, etc. Correct pricing will lead to better mobility choices as clearly shown in Singapore. Since the 1970s, Singapore followed a trajectory of “car-lite” through congestion charging and channeling this revenue to improve public transport and facilities for walking and cycling. Currently, Singapore is experiencing only a 0.5 percent increase in new private vehicles each year due to its successful measures that discourage private car ownership. To support the trend of reducing private vehicles, the city has plans to expand the cycling network to cover the entire island by 2030. While incentive to implement financial instruments

“We are harnessing the power of new transportation technology so we can achieve environmental safety and mobility goals. We want Portland to be a city that welcomes transport innovators and give them an incentive to work with us to achieve larger policy objectives.”

Leah Treat, Director of Bureau of Transportation, Portland, USA



“Prices for transport services are not reflecting their full costs, thus permitting car users to travel without being fully aware of the costs of his/her travel activity.”

Manfred Breithaupt, Consultant, Germany



is high, the city requires strong political will to implement this unpopular measure. In Amsterdam, Netherlands, the city channels 180 million USD per year earned through parking fees to finance public transport, walking, and cycling improvements. Shanghai, China, practices a license plate auction program to limit the number of new registered vehicles. The current price for registering a new car under this program is about 10,000 USD which generates approximately 800 million USD of city income each year.



“Investing massively into sustainable transport costs less than investing into the traditional auto-based transport.”

Clayton Lane, CEO, ITDP, USA

Shared Mobility Principles for Livable Cities

The future of mobility in cities is multimodal and integrated. When vehicles are used, they will be right-sized, shared*, and zero emission. These principles guide urban decision-makers and stakeholders toward the best outcomes for all.

- 1 Plan cities and mobility together
- 2 Focus on moving people, not cars
- 3 Encourage efficient use of space and assets
- 4 Engage stakeholders in decision making
- 5 Design for equitable access
- 6 Transition toward zero emissions
- 7 Seek fair user fees
- 8 Deliver public benefits via open data
- 9 Promote integration and seamless connectivity
- 10 Automated vehicles must be shared

*Shared vehicles include all those used for hire to transport people (mass transit, private shuttles, buses, taxis, auto-rickshaws, car and bike-sharing) and urban delivery vehicles.

SharedMobilityPrinciples.org
#LivableCities
#10principles

A heaven or hell scenario?

Named by *TIME Magazine* as one of the most influential persons in the world, founder of *Zipcar*, *Buzzcar* and *GOLoco*, Robin Chase used her keynote at the EcoMobility World Congress to paint a heaven and hell scenario for the future of our cities. If cities follow the status quo and do not proactively promote sustainable, shared mobility, the hell scenario will materialize. For better or worse, technology is changing our cities and the effect of those changes depends on the government’s readiness and response. The advent of autonomous vehicle (AV) technology could potentially disrupt climate and road congestion goals, as well as create traffic risks that could endanger urban life, if local governments do not plan ahead on how to integrate this form of transport into urban areas. Another emerging trend is shared mobility which is poised to disrupt car ownership. A proliferation of shared mobility schemes in cities all over the world shows that cities are ready to move towards sustainable mobility. How can cities avoid a future hell scenario? *The Shared Mobility Principles for Livable Cities* (<https://www.sharedmobilityprinciples.org/>) launched at the Congress presents ten guiding principles on how cities should plan for mobility.

As the climate change battle rages on, it is imperative that cities do not grab low-hanging fruits per se, but the process should be catalyzed through proper financing, institutional collaboration, active public engagement and education, and promote seamless and integrated access and connectivity.



The Kaohsiung Strategies for the Future of Urban Mobility

Adopted on 4 October 2017 at the EcoMobility World Congress 2017, the Kaohsiung Strategies for Future Urban Mobility were developed to inspire local governments to transform their transportation systems and mobility patterns to become more sustainable, low-carbon, people-centered and less automobile dependent. The Kaohsiung Strategies are based on the Shared Mobility Principles for Livable Cities, launched by 13 organizations in Kaohsiung in October 2017. It follows the Suwon 2013 EcoMobility Impulse and the Johannesburg Declaration on Ecomobility in Cities 2015. The Kaohsiung Strategies represent ICLEI's call to apply the 2030 Sustainable Development Goals and the New Urban Agenda to local mobility policies.

We commit to activating the urban mobility related goals in the Sustainable Development Goals (SDGs), the New Urban Agenda and the Paris Climate Agreement.

We commit to be leaders of the future of mobility, comprehend the new mobility options and services and encourage other likeminded change-makers to walk with us.

Our commitment to sustainable urban mobility and ecomobility is through the following strategies:

1. We plan our cities and their mobility together
2. We prioritize people over vehicles
3. We support the shared and efficient use of vehicles, lanes, curbs, and land
4. We promote equity
5. We support fair user fees
6. We work towards integration and seamless connectivity
7. We lead the transition towards a zero emission and renewable energy transport future
8. We support that autonomous vehicles (AVs) in urban areas should be operated only in shared fleets
9. We protect the air space of our cities
10. We apply sustainability principles for moving goods: Green freight and ecologistics
11. We engage with stakeholders
12. We prepare our local governments for mobility in the future



Translated in 6 languages including:

Traditional Chinese, Simplified Chinese, French, Spanish, German, and Korean

<http://www.ecomobilityfestival.org/declaration/>



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Legacies and reflections

Lasting urban transition involves transformation of both the physical environment and the social/institutional composition. In this transformation process, time and scale are critical determining factors. These factors were taken into account in structuring the Festival format. Kaohsiung took 22 months to plan, negotiate and prepare for the Festival, while the residents experienced an ecomobile neighborhood for 31 days, long enough duration to inspire long-lasting institutional and physical change. Furthermore, Kaohsiung selected a representative neighborhood to work with so that the impacts and learning can be scaled-up to a city level.

Physical legacy imprinted in Hamasen



Institutional legacy at a neighbourhood, city, and global level

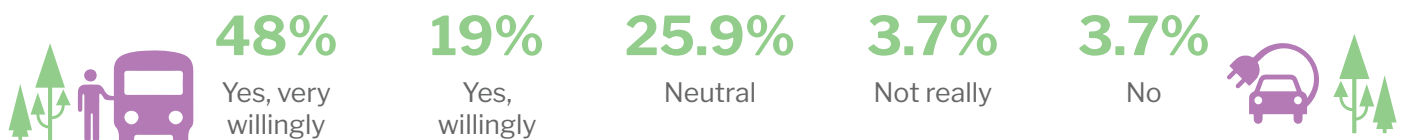
While the physical change is noteworthy to nudge people to good behaviour, the intrinsic institutional change is even more remarkable. The Festival triggered a paradigm change across the city bureaus and local residents towards ecomobility while establishing a closer relationship with the residents in the neighbourhood.



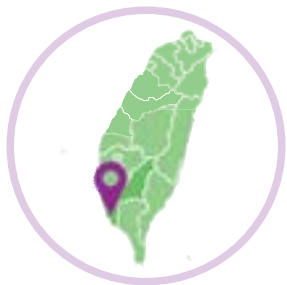
The Festival would never happen without the support of the local residents. Through the intensive public engagement exercises, it is evident that **public participation is a tool to build democratic and socially-inclusive cities**. Many of the inputs, concerns and feedback provided by the locals during public holdings or door-to-door visits were reflected in the city's plans for the physical change and transportation services. Although the city could not come to a complete agreement with the residents to give up their motorcycles entirely for a month, the residents largely softened their attitude and stance by collaborating with the city in switching to other ecomobile modes. At the end of the Festival, more than half of the surveyed residents indicated willingness to continue using ecomobile modes of travel to commute. A group of local businesses even formed an Alliance with the aim of continuing what was started at the Festival i.e. closing streets for local activities. Such grassroots movement is a leap forward in shaping the narrative of an ecomobile neighbourhood.

Neighbourhood level

Will you continue using ecomobile modes of transport after the Festival (i.e. walking, cycling, public transport, electric/ shared vehicles, and less private motorized vehicles)?¹



¹ Based on a rapid survey conducted at the end of the Festival amongst the local residents



City level



Global level

At a city level, there was a **distinctive paradigm shift in transport and city planning** towards ecomobility. Prior to the Festival, the concept of ecomobility was foreign to all city bureaus, which was a challenge for all bureaus to align and progress with the same vision. While planning for the physical transformation of the neighbourhood, one pertinent hindrance surfaced which hindered the process i.e. all city bureaus tend to work in silo. Under the leadership of the Mayor, a reshuffling of the city bureaus and responsibilities was conducted and a clear vision and goal was communicated which eventually led to closer collaboration and working relationship between all bureaus. Even within the Transport Bureau, the technocratic view of “roads for cars” was replaced with a people-centric planning process of “streets as space for people”. For the first time, the Transport Bureau as a traditional institution that built roads intentionally shifted and created street spaces for people.

Was this experiment of an ecomobile neighbourhood a success? Each visitors of the neighbourhood could be their own judge. However, one thing was clear - Hamasen was transformed into a living lab with various layers and dimensions for visitors to critically uncover, ponder, scrutinize and admire. Coupled with discussions at the congress and solutions showcased at the exhibition, a compelling message of ecomobility planning and policy paradigm was transmitted to participants and visitors. The city of Catbalogan, Philippines even included the concept of ecomobility in the ordinance of a new park as a result. The seed of ecomobility sowed at Kaohsiung instigated change across the world.

What’s next for Kaohsiung?

While Kaohsiung has successfully hosted the Festival, there are still some work cut-out for the city in order to achieve long-term sustainability and continuous improvement. A very apparent feature in Kaohsiung is the stark reliance of Kaohsiung-ites on motorcycles, a motorized two-wheeler with unique feature that could influence a rider’s behavior and psychology. For long-term sustainability, the city is more determined to examine strategies that could reduce reliance on motorcycles and switch to a less polluting and safer behavior. Lastly, through various engagements with the residents, the city realized that investment on younger generation is the key for transition as they are more versatile and environmentally-conscious. This Festival is just the beginning of a greater change in Kaohsiung.



About EcoMobility World Festival

The EcoMobility World Festival series have been initiated to show that an ecomobile lifestyle can be promoted in cities all over the world by transforming a neighbourhood and demonstrating the possibilities of an innovative and forward-thinking urban transportation culture.

About EcoMobility World Congress

ICLEI's EcoMobility World Congress series was launched in October 2011, Changwon, Republic of Korea, to establish a global forum on sustainable mobility for local governments and their partners.

ICLEI - Local Governments for Sustainability



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