The Kaohsiung Strategies for the Future of Urban Mobility

4 October 2017

*The **Kaohsiung Strategies** on the future of urban mobility shall inspire local governments to transform their transportation systems and mobility patterns to become more sustainable, low-carbon and people-centered and less automobile dependent.*

*The **Kaohsiung Strategies** strengthen ecomobile solutions; walking, cycling, public transport, shared mobility and their interconnectivity as the backbone of urban mobility in the future. The Kaohsiung Strategies call for a dedicated debate on the opportunities, challenges and threats of emerging trends, new technologies, subsidies and bans.*

*The Kaohsiung Strategies follow the Suwon **2013** EcoMobility Impulse and the Johannesburg Declaration on Ecomobility in Cities **2015**.*

*The **Kaohsiung Strategies** shall bring a strong message on urban mobility and climate to the UN Climate Conference COP 23 in Bonn in November 2017. They also present ICLEI's call to apply the 2030 Sustainable Development Goals and the New Urban Agenda to local mobility policies.*

*The **Kaohsiung Strategies** are based on the Shared Mobility Principles for Livable Cities, launched by 13 organizations in Kaohsiung in October 2017.*

We, the representatives of cities and entities that support implementing sustainable urban mobility, assembled in Kaohsiung on 2-4 October 2017 for the Third EcoMobility World Festival and EcoMobility World Congress 2017. Following the Congress themes of *livable, shared, and intelligent*, we confirm our commitment to sustainable urban mobility and ecomobility.

Our cities are experiencing unprecedented changes in transportation that are driven by social, economic and technical trends. As city leaders, it is our responsibility to guide these changes to ensure safe, clean, affordable, accessible, environmentally-friendly, intelligent and connected mobility options are implemented in our communities.

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

The way our cities are planned and developed determines mobility needs, how they can be met and how travel demand can be reduced.

We must:

- Call upon fellow city leaders, national and sub-national governments, and development agencies, to act on the conception, development and implementation of ecomobility (giving priority to walking, cycling, light vehicles, public transport, shared vehicles and their integration) within and between urban areas
- Encourage policies and plans at the local level that support compact, dense, accessible, green and livable cities, by creatively using all available instruments, such as urban design, building and zoning regulations, parking regulations, and land use policies
- Ensure greater integration of land use and transport by implementing mixed-use land policies

- Be ambitious when preparing and implementing sustainable urban mobility plans with short term and long term goals, decisions and investments
- Advantage those mobility modes that serve the majority of the people and disadvantage infrastructure for personal automobiles

2. We prioritize people over vehicles

Cities and metropolitan areas suffer to a growing degree from automobile centered infrastructure and decision making. To change these priorities we must:

- Consider moving people and goods instead of moving vehicles
- Invest in multi-modal infrastructure that increases accessibility especially for pedestrians, cyclists and public transport and reduces the use of single occupant personal vehicles
- Encourage a car-free lifestyles and discourage the desire and the need for private automobile ownership
- Plan for a maximum of 150 cars per 1000 inhabitants, mainly as shared cars
- Aim for a modal split where personal automobiles always represent a smaller share than other ecomobile options (walking, cycling, public transport and shared mobility)
- Ensure safe roads for people by setting an overall urban area speed limit of 30 km/h and 20 km/h in residential areas
- Use traffic calming strategies to slow vehicles
- Ensure investment in active transport (walking, cycling etc.) amount to at least 10 percent of road investment

The provision of walking and cycling infrastructure is amongst the least expensive elements in changing land use and transport patterns positively.
(International Energy Agency, 2009)

A pedestrian hit at a speed of 30 kph has a 5 percent chance of being killed, at 50 kph this is 45 percent, and at 65 kph 85 percent will be killed.
(European Transport and Safety Council, 2005)

SDG Goal 3.6: By 2020, halve the number of global deaths and injuries from road traffic accidents.

3. We support the shared and efficient use of vehicles, lanes, curbs, and land

In many cities, public and green space is in decline while cars take over significant space for roads and parking. To encourage efficient use of public space we must:

- Encourage small, light and right-sized vehicles with reduced energy and resource consumption and discourage the use of oversized vehicles, such as SUVs, by introducing size- and weight-based registration fees and access restrictions to inner city areas
- Plan for and invest in new approaches to accommodate the emerging variety of light, small, human powered and electric vehicles with different speeds for sharing road space between different modes and speeds. Experiment with complete and multi-purpose streets and explore opportunities of segregating modes

A city could serve its typical daily travel patterns with only 10 percent of the vehicles currently used, with a combination of 8- and 16-passenger vehicles ride-sharing service.
(OECD International Transport Forum, 2015)

Bicycles take up less than a third of the space of a vehicle, and pedestrians take up around a sixth. (FIA, 2016)

- Shift from minimum to maximum parking requirements (standards) for commercial and residential developments
- Price on-street parking higher than off-street parking
- Increase the acceptable level of congestion to avoid public investment in new roads
- Give dedicated space and signal prioritization to public transport and make their travel times more attractive than the one for vehicles
- Reduce travel demand by creatively designing public spaces that offer informal shopping, eateries, farmers markets within easy walking and cycling distance to residential areas

SDG Goal 11.2: By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older person.

Between 8 and 16 percent of urban household income is spent on transport, rising to more than 25 percent for the poorest households in very large cities. (FIA, 2016)

4. We promote equity

Mobility in our cities, access and safety are often too dependent on social status. Car owners in almost all parts of the world are more independent in their mobility than non-car owners. To promote equity we must:

- Ensure physical, digital, and financial access to public space and transportation facilities for people of all ages, gender, income levels, and physical and mental abilities
- In particular, take children seriously; they are indicators of our cities' and societies' health and social exclusion starts in childhood.

SDG Goal 10.2: By 2030 empower and promote the social, economic and political inclusion of all, irrespective of age, sex, disability, race, ethnicity, origin, religion or economic or other status.

5. We support fair user fees

Subsidies and public support are often given to private vehicle infrastructure. Instead, we must:

- Ensure that every vehicle and mode should pay their fair share for road use, congestion, pollution, and use of curb space. The fair share shall take the design, construction, operating, maintenance and social costs into account
- Create disincentives for motorized private vehicles such as levying high fuel taxes, adding road tolls, and increasing parking pricing and allocating investment gained towards active transport and public transport infrastructure
- Terminate subsidies for non-sustainable mobility options
- Establish road use charges for vehicles based on miles traveled or vehicle weight. These charges can then fund design, construction, operations, and maintenance of road facilities
- Employ congestion pricing for areas such as city centers to regulate peak period travel demand and fund design, construction, and operations, and maintenance of road facilities or contribute to covering the social and environmental costs of vehicles

It is estimated that on average cars in cities are being used for only 1 hour per day, and that up to 50 percent of traffic congestion in cities is made up of cars cruising for parking. (URBACT, 2017)

Over the past decade, congestion charging along with a well-integrated system of public transport in London led the move away from cars by 9 percent over the past decade. (City of London, 2015)

6. We work towards integration and seamless connectivity

All means of moving people or goods need to be well integrated into systems. To achieve this we must:

- Integrate all transportation services and thoughtfully plan across service providers, geographies and complementary nodes
- Develop intermodal nodes that serve as focal points in the transportation network
- Facilitate multi-model trips by enhanced on-site and online transportation service information on connections, payments and access
- Enhance local and regional cooperation in planning, operations, maintenance and funding of transportation facilities to enable a unified system
- Enable a systems approach for competition and innovation of data infrastructure for shared transport services while ensuring privacy, security, and accountability

The possible cumulative societal benefits of a seamless mobility model could boost the 2030 GDP of urban areas by 3.9 percent. (BNEF and McKinsey, 2016)

Inter-modality is essential because most non-motorized, active transport trips, are short distance (waking for less than 3km) and cycling is the most energy efficient way for a person to travel a relatively short distance, e.g. 0.5 to 5km at speeds of 10 to 30kph. (UNEP, 2010)

7. We lead the transition towards a zero emission and renewable energy transport future

Transport is one of the key sources of GHG emissions (up to 23 percent of energy related CO2 emissions come from transport), and these emissions from urban transport are growing. To reduce GHG emissions from urban transportation we must:

- Set priorities in decision making and investments towards low emission, soot-free and environmentally friendly vehicles and mobility
- Shift public transportation and shared use fleets to zero emission vehicles
- Remove diesel-fueled vehicles from our cities by 2025
- Ban fossil-fuel vehicles from cities by 2040 and stop all subsidies for these vehicles
- Remove fossil-fuel subsidies in our cities by 2030 and support the transition away from fossil fuel by rationalizing the inefficient fossil-fuel subsidies and set fuel taxes
- Promote small, lightweight, shared electric vehicles powered by renewable energy
- Work with the energy sector to enable an energy transition towards renewable energy as a condition for e-mobility

If unchecked, transport CO2 emissions could increase 60percent by 2050.

Higher fuel efficiency and alternative fuels can reduce freight CO2 emissions by 40percent. (both: ITF, 2017)

Around half of the urban population is exposed to levels 2.5 times higher than the WHO Air Quality Guideline and Air pollution deaths cost global economy USD$225 billion. (WHO, 2016)

8. We support that autonomous vehicles (AVs) in urban areas should be operated only in shared fleets

Producers of autonomous vehicles are developing the technology faster than local governments can react to, plan for, and regulate as appropriate. Given their potential to

become market-ready, AVs could dramatically impact travel and urban form of our cities. To prepare for such developments we must:

- Prioritize active mobility modes in all planning and decisions and the use of public transport over shared automated vehicles
- Build capacities among local decision makers and planners on the diverse aspects and impacts of autonomous driving and artificial intelligence for our cities
- Regulate the operation of autonomous vehicles with public interests and infrastructure in mind
- Protect public goods and interests and engage public and private decision makers in the debate and decision making
- Require that all autonomous vehicles are zero-emission and part of shared fleets
- Ensure maximum public safety, and that maintenance and software upgrades are managed by professionals
- Prevent fencing of public space as a consequence of the introduction of autonomous vehicles

By 2030, the number of autonomous vehicles (AVs) including cars and trucks on Earth could surpass 5 million and is expected to completely transform how we travel, the shape of our cities, and the way we live.

The impacts of AVs on cities aren't yet clear but in just two decades this shift will have run its course, and cities will be committed to the changes that AV markets, regulation, and planning have set in motion.
(Bloomberg-Aspen Initiative, 2017)

9. We protect the air space of our cities

Manned and unmanned, radio controlled and programmed autonomous aerial vehicles have started to become a risk in our city airspace. To protect our city air space we must:

- Protect the urban air space in our cities by applying sustainable principles to manage this public space and resource.
- Require governments to regulate these vehicles and educate the public regarding the rules and regulations.
- Limit the operation of drones and flying automobiles and taxis in urban areas to public security and public interest purposes and require permitting processes in participatory, transparent procedures
- Determine dedicated starting and landing spots and aerial traffic routes for permitted drone operations in "urban air traffic plans"

Sales of drones are expected to grow from 2.5 million drones in 2016 to 7 million in 2020—a 180percent increase. (Federal Aviation Administration, USA, 2016)

With some one million drones entering the airspace globally each month, the prospect of securing drones is becoming more daunting. ... Here are eight drone-related risks: 1. Airspace Threats, 2. Vehicles for Weapons, 3. Low-Tech Corporate Espionage, 4. High-Tech Corporate Espionage, 5. Smuggling, 6. Collisions, 7. The Difficulty of Enforcing the Rules, 8. Drone-Based Hacking.

(Internet of Things (IoT) Institute, Overland Park, Kansas, USA)

10. We apply sustainability principles for moving goods: Green freight and ecologistics

The increasing transport of goods presents unique problems and challenges to our cities, including congestion, air pollution, and accidents. To plan for this trend we must:

- Introduce policies and rules for the movement of goods into transportation planning, and *Sustainable Urban Mobility Plans*
- Engage and support freight stakeholders in low-carbon freight solutions including truck sharing, route optimization, retiming freight delivery, more operational efficiency, higher fuel efficiency and alternative fuels, use of cargo bikes and electric mini-trucks for last-mile delivery and further innovative options
- Support localization of food and goods production to lower the long-distance transport of goods and to strengthen local economies
- Acknowledge the rights of street vendors, given they respect the sharing of public space and transport their goods in non-motorized or small and emission free vehicles

Global freight CO2 emissions could increase by 160percent by 2050 as freight volumes grow threefold according to OEDC trade projections. (ITF Transport Outlook, 2017)

Urban freight contributes to 20-40percent of urban transport emissions and uses 20-40 percent road-space.

Last mile emissions are estimated to account for up to 25 percent of logistics supply chain emissions and 28 percent of total transport costs. (Alan McKinnon, 2012)

11. We engage with stakeholders

The trends toward shared, low emission, electric, or autonomous vehicles directly impacts the lives, investments and economic livelihoods of residents, workers, businesses, and other stakeholders. To practice good governance we must:

- Actively engage stakeholders in the decision-making process and take their interests into account
- Give priority to grass root organizations and neighborhood level solutions rather than to those being imported from distant locations with a different urban and social context
- Provide mechanisms for finding consensus or to balance conflicting interests
- Take into account that investments in stakeholder engagement for transportation related decisions often accelerates decision processes, identifies better solutions, fosters future cooperation, creates ownership and improves well-being of our urban life
- Encourage and request the creation of national urban mobility plans, the application of the subsidiarity principle, a constructive dialogue between national and local levels as well as enabling mechanisms to allow cities to manage, operate and finance their mobility.

Sustainable urban mobility planning, a strategic planning concept promoted by the European Commission, considers the engagement of citizens and stakeholders throughout the Sustainable Urban Mobility Plan (SUMP) development process as one of the key elements.

12. We prepare our local governments for mobility in the future

Transport and mobility are sectors of growing relevance and economic dynamism with potential ecological and social impacts and conflicts, especially in fast growing cities. In preparing for the future we must:

- Remain open to new technologies and change while prioritizing people and sustainability at the core of our decision making
- Educate local government staff so they may engage in and facilitate debates
- Request donors and funders as well as regional and national governments to provide resources for capacity building
- Engage in regional, national and international networks on sustainable transportation, learn from others and enrich the exchange through own innovation
- Develop Sustainable Urban Mobility Plans or equivalent transportation planning documents, with ambitious targets following the 2030 Sustainable Development Goals and the Paris Agreement on climate change and implement these policies and plans without delay.

The application of these strategies materializes the following SDGs:

Road Safety (3.6), Energy Efficiency (7.3), Inclusion (10.2), Urban Access (11.2), mitigate Air Pollution (3.9) and Climate Change (13.2).

The Kaohsiung Strategies promote effective public, public-private and civil society partnerships (17) for participative, representative and inclusive decision making in Sustainable Urban Mobility planning (9.1, 11.6).

The Strategies also support capacity-building (17.9) for data collection and monitoring (17.18) as well as for solution implementation (17.8) and sustainable financing.

For more information

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