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POLICY BRIEF:

BALANCING TECHNOLOGY-FOCUSED AND PEOPLE-CENTERED DEVELOPMENT: KEY ELEMENTS FOR A JUST TRANSITION IN THE TRANSPORT SECTOR

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Decarbonization policies and strategies intersect with existing inequalities, resulting in varied impacts. This means transition will affect people differently, with groups better able to adapt than others. Given the recognized disparities in transport related to income, gender, race, age, and physical abilities, a just transition focused on users is urgent and represents a basic right. Advancing a just transition requires labor market policies that provide users with income support on their daily commutes and transport planning strategies that leave no one behind. These measures aim to provide affordable and equitable access to opportunities, reduce inequalities and discrimination based on minorities and gender, and address the structural injustices within urban mobility systems and its current patterns. The City of Kaohsiung, Chinese Taipei, provides a model for other cities to follow.

INTRODUCTION

Beyond the climate crisis, the world is facing a transport crisis, particularly in low-income countries. Even before the pandemic, public investments in urban infrastructure lagged behind demographic and economic growth, resulting in millions of residents and workers bearing higher costs for their daily commutes [1]. In addition, there are significant horizontal inequalities and informality dominates urban mobility in some regions [2].

In this sense, transport decarbonization presents several challenges, including behaviour change, infrastructure required, funding, revenue generation, and competition for alternative fuels. Crucially, certain groups and minorities often encounter hurdles in accessing opportunities arising from the transition due to the historically inequalities and injustices that can be exacerbated over time if no action is taken.

Rapid urbanization and motorization, combined with insufficient urban planning and low investment in infrastructure and affordable housing, have led to traffic congestion, reduced mobility, pollution, and preventable fatalities [3]. Unequal access exacerbates minority and gender-based exclusion and discrimination, widening socioeconomic disparities. Additionally, the unsafe and unreliable transport system reduces social and economic welfare [4]. Concerns about job losses and changes

during the transition could impact household income and affordability, especially for low-income and vulnerable populations, and in this case, labor market policies providing fair wages, social protection and unemployment aid are needed [5].

Addressing these challenges requires people-centered solutions to bridge the gap during the transition process. Understanding how the just dimension is being (or should be) integrated ensures improvements and the certainty of transportation embedding people's needs.

JUST TRANSITION DRIVEN BY THE USERS: CONSIDERATIONS IN THE CONTEXT OF SUSTAINABLE MOBILITY

Assessing the social implications of the energy transition is essential for developing just and low-carbon urban transport systems [6]. And this means understanding three core justice dimensions to be embedded: Distributive, procedural and recognition justice [7].

Distributive justice states that the relationship is perceived as fair when the distribution (burdens and benefits) is proportional to the contribution of each person in a given social group.

Procedural justice focuses on the nature of decision-making and governance, including the level of participation, inclusiveness, and influence participants can wield.

Recognition justice is closely aligned with perceptions and involves acknowledgment of and respect for the rights, needs, values, understandings, and customs of groups involved in, or affected by, decision making and governance.

Travel behavior depends on a complex interplay of personal and societal factors, resulting in inequalities

at various points within the system. These inequalities often stem from an uneven distribution of transport opportunities across different areas, the varying ability of people to use the existing transport system, or a combination of both.

For instance, women and marginalised groups experience multiple forms of discrimination and have different mobility patterns than what is typically planned for i.e. men's patterns. Concerns are frequently based on decisions not to stay alone in the bus, to avoid public transport at certain times of the day and choose specific routes [8]. Also, transport remains largely inaccessible for people with disabilities in many countries [9].

Socioeconomic conditions can be significantly impacted by uneven transport distribution, high fares, and low salaries. People who rely on public transport for work often have lower incomes, live in deprived areas, and may turn down jobs due to transport issues. Also, inequitable geographic distribution of transport hinders access to opportunities like employment, education, healthcare, and recreation.

Walking and cycling can also drive injustices if not well-planned. Low-income communities rely heavily on active transportation, with lower rates of car ownership and longer commutes compared to higher-income communities [10]. However, they face many obstacles, including inadequate access to safe infrastructure, e.g. lack of cycling lanes, parking and poor pavement and bus shelter conditions. The underreported data on micromobility also limits equitable infrastructure in underserved communities [11].

Furthermore, intergenerational relations must be discussed. Studies on school buses in the United States have shown the air quality can be worse inside the bus than outside of it, which is particularly harmful for children, especially those with asthma and other health issues [12]. Additionally, unsafe transport infrastructure poses a disproportionate risk to younger individuals, with road traffic injuries being the leading cause of death for children and youth aged 5 to 29 [13]. Moreover, the elderly often struggle with the rapid advancements in technology, which can be further complicated by the increasing digitalization and automation of systems and their associated apps.

Procedural justice in transport highlights the exclusion of people from participation, reflecting a structural one-size-fits-all approach. Sustainable transport options should empower all individuals, regardless of gender, income, race, age, and physical abilities. However, many cities lack collective action plans and disaggregated data on these issues [14]. Therefore,

policies and transparency must be paired with public participation to address urgent transport demands.

Recognizing urban transport injustices can drive changes in urban planning, transport infrastructure, and traffic management. For example, investing in efficient and affordable low-emission transport options, such as e-buses and e-bikes, would benefit a broader range of people and help reduce social disparities, compared to prioritizing electric vehicle purchase incentives, which only serve a smaller segment of the population. Moreover, acknowledging the differential impacts of transition on various groups can lead to more effective responses to core inequalities.

TIME TO ACT: MAIN INSIGHTS AND RECOMMENDATIONS

The intersection of different characteristics in the transport system can lead to aggravated inequalities. Therefore, it is crucial to explore how to integrate social considerations in transport planning and how decision-makers can promote more impactful initiatives across the sector and its users. In this context, competencies for transport policy are distributed across various levels. However, all must uphold basic principles of dignity and support better commuting choices. This requires multilevel coordination between local and national governments, as well as the private sector. Key recommendations, based on users' demands, include:

For local and regional governments (LRGs):

- Encourage mindset shifts that promote modal shifts to sustainable options, creating opportunities and fosters a sense of belonging.
- Advocate for legislation promoting zero-emission transportation systems tailored to region-context profile and incomes.
- Define progressive metrics and targets to enhance sustainable mobility.
- Foster dialogues within communities about benefits of sustainable mobility as well as address topics such as infrastructure deployment, adoption of new technologies, creation of green jobs, and the implementation of incentives and regulations in the transport sector.
- Engage locals and underserved communities in the design, planning, and implementation of urban mobility facilities and infrastructure. Reinforce the need for participation, particularly considering gender-based, elderly and minority group-based. Also, transport infrastructure implementation must be context-specific and prioritize vulnerable areas when possible.
- Conduct public consultations and systems to collect

transport users' satisfaction or complaints accompanied by tracking measures and transparency, which are low-cost and best practices. Data gathering and disaggregated information are crucial for planning integrated public transport, designing passenger information systems, and collaborating with operators to enhance services for users, including women and marginalized groups, throughout the transition.

- Prioritize and integrate walking, cycling, and public transport infrastructure into resilient urban planning strategies to address climate change and reduce vulnerabilities in marginalized communities. Including informal transportation systems in these discussions ensures a comprehensive approach.
- Promote walking and cycling combined with the rise of new mobility options like e-scooters and e-bicycles in order to accelerate the transition to sustainable mobility as they gain popularity, better facilities and regulatory acceptance. Integrating these modes into public transport systems can enhance accessibility and encourage a shift away from private vehicle use. In addition, a good measure is to provide and use mobility data to advocate equitable infrastructure in underserved communities.

For national governments:

- Plan a progressive and just fossil fuel phase-out and remove fossil fuel subsidies in a socially acceptable manner.
- Set out policies and regulations to support sustainable urban mobility and offer enabling conditions to escalate multi level initiatives.
- Channel more impactful initiatives across the transport sector. Should step forward with bold, transformative initiatives, through multi-stakeholder partnerships, joint initiatives and programs, engaging with communities to promote low-carbon emission transport modes, social protection measures, and endorsing commitments.
- Coordinate actions at the international level through cooperation and financing, so that cities can align and accelerate sustainable urban mobility.
- Promote policy regulation and private partnerships to facilitate diverse financing options and improve access to support the transition to sustainable and equitable mobility.
- Work with the private sector to develop alternative business models to reduce up-front costs and enhance infrastructure and sustainable urban mobility.

For the private sector:

- Review strategies and align investment criteria with zero-emission projects. This includes a high need for long-term and low-interest loans for sustainable infrastructure.

- Disinvest in high-emitting activities while de-risking and switching investments to projects with impact by using different criteria that prioritizes sustainable development.

- Facilitate a swift transition to zero-emission vehicles by actively engaging with investees. Encourage all portfolio companies to decarbonize their fleets and provide capital and financial products to support consumers, businesses, and charging infrastructure manufacturers, for instance.

Public-private approaches:

- Create conditions, enabling frameworks and appropriate regulation to reduce risks in the financial sector, as well as unlock and/or facilitate access to credit, financing, capital and alternative resources. The criteria should prioritize enterprises and infrastructure projects in low-income communities.

- Provide financial support to adopt sustainable and just mobility practices with approaches that go beyond traditional subsidies. Encourage innovative financial instruments, carbon taxes, green bonds and bond market ratings and standards, including ESG standards foster innovative and sustainable projects.

- Create specific funds for transport decarbonization and sustainable urban mobility.

- Collaborate on knowledge-sharing and innovative business models that define budgets and resource allocation for mobility, and savings at the city level.

CONCLUSION

Transport influences urban development and, consequently, society. It provides access to basic rights and fosters independence by allowing people to freely choose their destinations and activities. Understanding the differentiated impacts of the transition on minorities and marginalised groups ensures that these groups keep their basic rights and do not bear disproportionate costs.

In low-income countries, inequalities are quite visible in the transportation sector. Most cities heavily rely on public buses and informal public transport modes, which often lack affordability and minimum conditions to use it, creating significant barriers to accessing opportunities.

Advancing a green and just transition in the transport sector presents an opportunity to combat inequalities and discrimination by collaborating with stakeholders in providing users with affordable fares, convenient, equitable and safe pathways and transports systems. Working and leading in this area can be transformative, inspiring others to follow suit.

GET TO KNOW: KAOHSIUNG, CHINESE TAIPEI

Kaohsiung has approximately 2.7 million inhabitants and it is a port-city which serves as an important industrial and commercial hub within the region.

The city is dedicated to fostering a top-tier culture of sustainable mobility by creating a people-centered transportation environment. This effort focuses on enhancing ecomobility solutions such as walking, cycling, public transport, shared mobility, ecologistics, and their interconnectivity, which are the backbones of urban mobility. In this context, the city fosters measures to enhance accessibility by offering services or products that allow people with disabilities or other limitations such as elderly and pregnant people, caregivers and children, to reach their destination. For example, by using concepts of transit-oriented development, the city offers wheelchair ramps and accessibility equipment in public services, bus fleet and taxis.

Kaohsiung aims to cultivate a smart, sustainable and safer relationship between people, transport and the city. Highlighted by the City's representative of the Transportation Bureau during the ICLEI World Congress 2024, Kaohsiung is investing in a multimodal and interconnected public transport system. One example is MenGo, a Mobility as a Service (MaaS) platform that allows users to pay for all forms of public transportation (light rail, ferry, mass rapid transit, bus, YouBike 2.0) with a mobile device, among other services. It aims to encourage the switch from private vehicles to public transport, reducing carbon emissions, improving transportation quality, and



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maximizing the efficiency of public transport utilization. Another important point raised by the Bureau is the need to integrate rural areas into the transportation system by emphasizing equity and comprehensive data collection. It ensures services and necessities of these areas are adequately met and they have a sense of belonging.

Lastly, the city is highly committed to the urban mobility agenda and the goals outlined in the Sustainable Development Goals (SDGs) and the Paris Climate Agreement. Therefore, Kaohsiung is expanding its decarbonization initiatives by developing mechanisms for managing private vehicles, prioritizing people over vehicles, and directing decision-making and investments toward low-emission vehicles. One key target is the progressive deployment of electric buses by 2030.

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