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Planning a long-term zero carbon transition pathway

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1. INTRODUCTION

In 2019, the EU approved the Green Deal strategy, committing itself to net zero by 2050, after abundant scientific evidence about the causes of climate change, its impacts on the human and natural worlds and decades of climate activism. In this context, cities and transport play a very important role as sources of CO2.

The transport sector contributes around 25% of urban carbon emissions, but is the sector that has reduced its emissions least, over time – it must decarbonise rapidly if global climate change targets are to be met (IEA, 2020). Around 72% of total transport CO2 emissions come from road transport – and the transport sector has proven hard to decarbonise.

Sustainable Urban Mobility Plans are now well established; for example, in France, Wallonia, Flanders, and Catalunya, they are a legal requirement. But with a growing focus on carbon reduction across all city functions, many cities have also started to plan for climate change using a systemic and comprehensive approach that includes transport as one component. Urban climate plans are increasingly appearing in Europe, to address the carbon challenge.

The New Mobility Framework (2021) is the EU's response to the challenges cities face in providing their mobility systems taking into account climate change, and builds on its 2013 urban mobility package to focus on meeting the zero carbon 2050 target. This target strengthens the need to focus on decarbonization and to update SUMP guidance in this respect[2]. Given the extended timescales involved, it is clear that the target cannot be met in one SUMP cycle and that carbon mitigation strategies need to be embedded within a longer term approach: a zero carbon transition pathway.

The task of establishing the most suitable policy strategies for meeting the long-term target in a given city can be seen as a contributing to a cumulative process of transition – getting from where we are now to where we need to be, by 2050. This involves not only identifying the policies needed to get us there, and their timing, but also the reforms in governance and the strengthened cross sector collaborations required to support and enable the delivery of these policies. It is important that a city identifies the full package of interventions needed to deliver the zero carbon target. Interventions to be implemented later need to be identified from the start, to ensure that cities have the funding, authority and skills to enact them in time to implement them in the future.

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2 https://www.eltis.org/sites/default/files/sump_topic_guide_decarbonisation.pdf

2. CHALLENGES AND OPPORTUNITIES

The transport planning cycle in cities is generally aligned with the development of SUMPs. These have a planning horizon of 5 to 10 years, with some plans not surviving beyond a single political mandate. In this sense, most cities do not have a longer term planning tool or methodology to help them plan for and achieve 2050 carbon targets.

Where cities have applied long term climate planning, this has been achieved through Climate Plans and Sustainable Energy and Climate Action Plans (SECAPs), but here the links between the strategies adopted to reduce carbon in the different sectors are not well developed. This is particularly problematic for transport, as this is largely a derived demand and so is partly dependent on other sectors' strategies (see SUMP-PLUS Policy Brief 2 on cross-sector links). Furthermore, many Climate Plans do not go beyond general strategies to consider specific actions, nor how these actions would be implemented, on the ground. So, there is a lack of integration between high level strategies and operational and medium term planning.

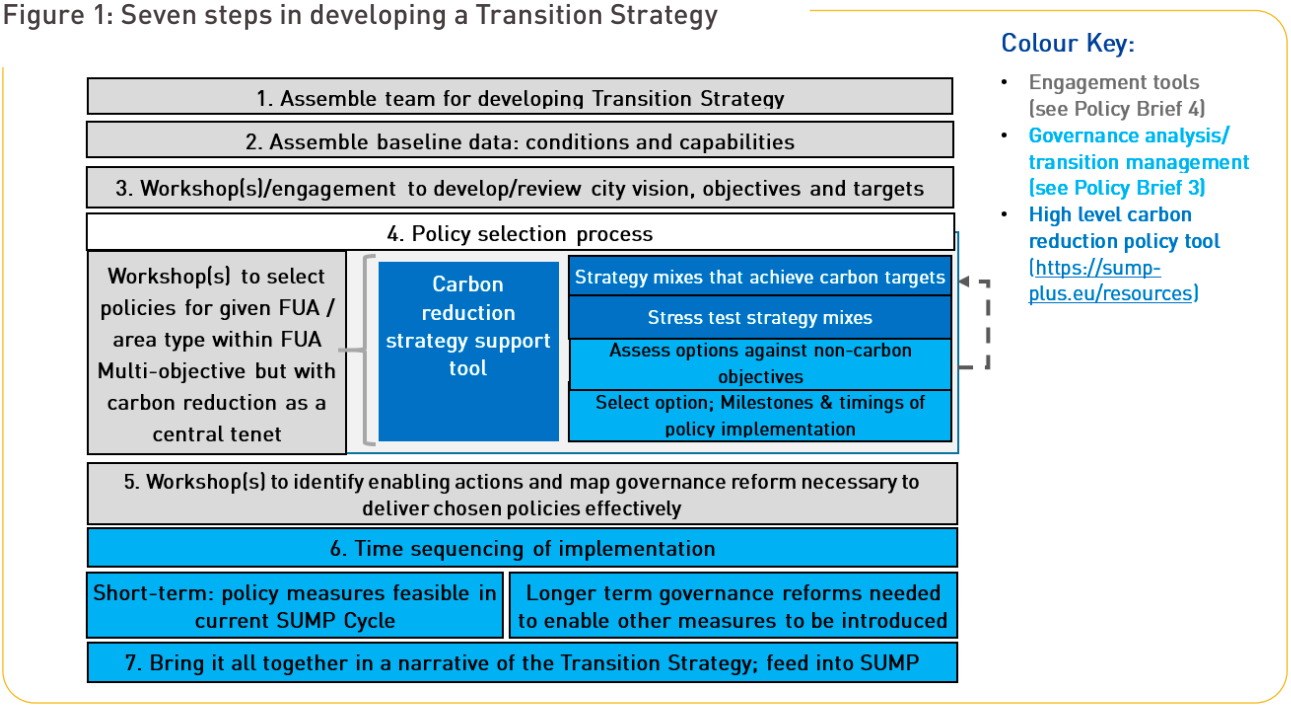
3. SOLUTION: DEVELOPING A ZERO CARBON MOBILITY TRANSITION PATHWAY

This process of transition to a zero-carbon mobility sector can be described through the development of a transition strategy set out in a long-term Transition Pathway (TP) (see Figure 1). Within the SUMP PLUS project, a Transition Pathway methodology has been developed, that helps cities to develop a pathway to achieve zero carbon emissions from urban mobility. This is based around citizen engagement, a strategy selection tool and transition management approaches, all aimed at achieving science-based targets.

The seven-step process is summarised in the figure below.

1. **ASSEMBLE TEAM.** The foundation to develop a zero carbon urban mobility transition strategy is to assemble a team that includes the key stakeholders that regulate, plan, operate and generate the demand for travel, many of whom will also be involved in the SUMP processes. The strategy is developed at the scale of the Functional Urban Area and the team assembled should reflect this.

Figure 1: Seven steps in developing a Transition Strategy



2. **ASSEMBLE BASELINE DATA.** This includes both quantitative data on current conditions, past trends and future background conditions (e.g. expected population growth), and sets out the governance conditions and institutional capabilities.

3. **DEVELOP CITY VISION.** This requires a collaborative exercise and sets the desired outcomes for the city, in terms of zero carbon and other long-term goals. It describes the kind of city that people would like to live in, work and visit, that will deliver carbon and other strategic policy goals (e.g. Vision Zero for traffic deaths). The desired outcomes are translated into objectives and end targets, plus intermediate targets to monitor progress.

4. **POLICY SELECTION PROCESS.** This needs to be an interactive process, with key stakeholders testing alternative strategies to identify their potential contribution to achieving zero carbon and other targets; the SUMP-PLUS Carbon Reduction Strategy Support Tool offers a means of identifying the effectiveness of various strategies. This will result in a recommended set of 'Avoid-Shift-Improve' policy strategies, with indicative timings, that will enable the city to achieve their interim and longer-term carbon reduction goals (either in the form of a carbon zero target, or a total carbon budget).

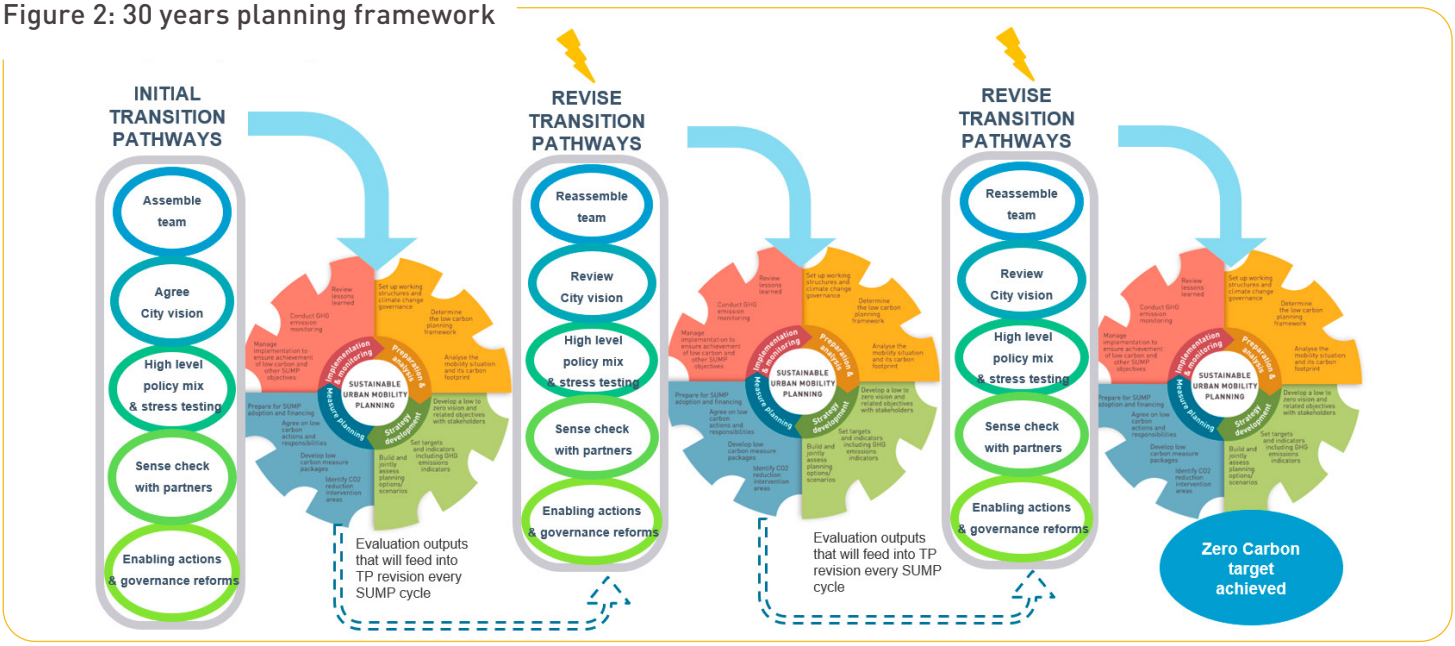
5. **ENABLING ACTIONS & GOVERNANCE.** The successful implementation of the selected package of Avoid-Shift-Improve strategies will require the existence or development of a suitable set of enabling actions and governance arrangements. This step assesses what policy measure implementation is currently feasible and what will require governance reform (e.g. new legislation).

6. **TIME SEQUENCING.** This identifies those policy measures that can be implemented during the next SUMP cycle, while the remainder are tentatively allocated to future SUMP cycles, with an action to ensure that the necessary changes in governance are in place by that time.

7. **BUILD TRANSITION STRATEGY NARRATIVE.** This narrative should summarise the components (strategies and policies) proposed in the transition pathway, identify those to be developed and implemented during the coming SUMP cycle, and set out the actions that are needed to refine governance arrangements in time to implement other strategies and policies in future SUMP cycles.

This approach links a city's transition pathway and SUMPs (see Figure 2), in order to align long term planning and short and medium term implementation. There is a focus on monitoring and evaluation to assess the effectiveness of implementation within a SUMP cycle, that feeds back into and modifies the longer term Transition pathway – taking into account any new innovations that could offer new strategies or enhance existing policy measures, to achieve agreed targets.

Figure 2: 30 years planning framework



4. CONCLUSIONS AND POLICY RECOMMENDATIONS

Meeting the zero carbon target is very challenging, but there are some grounds for optimism. First, policy and strategy at all levels are beginning to align with systems thinking and climate planning. There is increasing funding available, although not enough and models of funding that rely on bidding for it might put pressure on local authorities to allocate extra resources for this. Also, knowledge platforms and knowledge sharing has become more common between cities, which increases the speed of dissemination of planning tools and approaches, and lessons learnt. Perhaps most importantly, citizens and other stakeholders consider climate change as the biggest challenge we face and increasingly demanding action. This is an opportunity for local authorities to communicate with their citizens about how climate change will impact urban life and call for improved participation. From an economic point of view, the transition will mean re-skilling staff, and identifying and exploiting growth opportunities.

In order to meet zero carbon targets, based on research and following the above-mentioned methodology, we recommend cities to:

- Promote a long-term planning approach in the mobility sector, built around "Transition Pathways" incorporating improved engagement tools, a high level carbon reduction strategy support tool and transition management approaches.
- Strengthen the alignment between strategic (long term) and operational (short to medium term) planning, by linking transition strategies and pathways to the SUMP cycle. This would require long-term carbon strategies to be defined at a high level, and then successively translated into specific measure packages to be implemented within a 5 to 10 year time period, while taking into account any governance and financial long term changes needed. There will also need to be a recursive feedback/Monitoring and Evaluation loop between the SUMP cycle and the long-term transition pathway.
- Adopt systems thinking when addressing joint transport and Climate Plan targets. Also, link zero carbon targets to other city goals such as growth, well-being, resilience, Vision Zero (traffic accidents) and equity. Consider the impacts of other sectors on the demand for transport and incorporate AVOID measures into SUMPs policy strategies.
- Collaborate across sectors and levels of government to support cities to obtain an appropriate level of funding for implementing transport measures but also for enabling measures. These includes skills and local human resources, legislative and administrative changes and data (e.g. local transport, climatic, economic and social data).

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