

# TDA Training Program on Transport Decarbonisation

## Module 6

### Low Carbon Mobility for Low Density and Rural Areas



**Deployment:** Online / blended

**Workload:** 3 hrs



**Extra learning:** 2 hrs

#### Module working group:

- Patrick Oliva – Paris Process on Mobility and Climate (Leader)
- Pedro Filipe – Portugal
- Tbc – Cabo Verde

## Learning outcome

Although most people do or will live in cities, a lot of urban dwellers live in small cities in which mobility/transport patterns do not fundamentally differ from low density areas.

Additionally, a lot is still to be done for the part of the world which feels often left outside the modern mobility path: low density and rural areas. This course will concentrate on those areas and related challenges.

Trainees will discover that this is the place where the battle against GHG build-up will actually be won or lost because this is where alternative solutions will have to demonstrate that they are effective enough and, in particular, economically attractive enough to be chosen by relatively low-income populations (which indeed represent the largest share of the world).

The success of the transformation will depend on our ability to design new lifestyle paradigms (sharing, decentralization, new fiscal patterns, etc.) which will make mobility more reliable, cheaper, more fun, more efficient and more inclusive than today.

Trainees will learn how to move forward with a comprehensive, down-to-earth approach, where the magnitude of the challenges faced to decarbonize is huge; much bigger indeed than in big cities.

For trainees' comfort, this module will continue using the Avoid – Shift – Improve (A-S-I) methodology introduced with Module 1.

# Syllabus

The notion of access to jobs and services is paramount in low density and rural areas. In such areas, mobility is key to achieve SDGs (poverty alleviation, access to education, etc.). When access is not permanently secured yet, the priority is to create it. If it is secured, then the two priorities are to streamline it and decarbonize it.

The course will be structured with the ten following themes, proposing adequate policies, toolboxes and examples:

## 1 Secure access

In rural areas, where most of the world's poor live, limited access to transport is a key challenge to eradicate poverty and initiate a solid, sustainable economic development. In Africa for example, two thirds of the total rural population are estimated to have been left unconnected due to missing transport infrastructure and systems. It must be recognized also that lack of access to mobility services has disproportionately negative impacts on women and girls. And Africa is not the only continent plagued by such a handicap.

The SuM4All "Global Roadmap of Action Toward Sustainable Mobility" and its extended Rural Access chapter provide an excellent overview of the topic and suggest priority policies to raise against the challenge.

## 2 Streamline Access

All efforts are to be made to regroup services (medical, educational, administrative, food, sports, culture...) in a limited number of places as opposed to letting them mushroom everywhere, and optimize opening hours, as well as on-line services. This requires well thought-out territorial strategies, too neglected so far. Maintenance and adaptation to critical climate events are essential too. The development of ITS is also critical to ensure the best use of infrastructure and services, provided that access to 4G/5G technology becomes universal. Policies and toolboxes are to be developed.

## 3 Incentivise shared mobility services

On roads, carpooling & carsharing, bus services and informal public transport must be made easy, as well as economically and fiscally attractive for people, in order to reduce individual car use, the prevailing means of transportation today. On rails, new, lighter, non-diesel technologies must be designed, with services provided 24/7.

On-demand flexible solutions should be adopted for low density areas which do not generate the demand required for permanent, regular every-day transport services.

For freight, bound to increase dramatically in the coming years, shared shipping is a must and shared platforms, operated by the private sector, are to be developed, with pertinent policies and fiscal incentives.

## 4 Incentivise combined decentralized energy and mobility services

Clean electricity, hydrogen, bio-methane, electro-fuel are to be produced locally and supplied, first of all, to local communities to minimize costs and transport expenses. This is the only way that can lead to moving away from fossil fuels, for people's mobility and for freight.

Both scenarios of individual equipment (housing) and hub creation for collective use are to be explored and made economically attractive through proper technical choice, policies and operating rules.

## 5 Promote soft mobility

(E-)cycling, e-2Ws, waterways, air-balloons, animal traction, use of existing infrastructure (e.g.: rails for light devices) are to be encouraged, in addition, of course, to walking for relatively short distances. The promotion of soft mobility is also a matter of public health and must receive strong support from both national and local authorities to ensure that well thought-out infrastructure and regulations guarantee the safety of people practicing soft mobility.

Various light mobility devices have been invented (gyro-wheels, hoverboards, scooters, etc.) and many more will. Their use can be intelligently managed, recognizing that they are energy efficient and do not require huge infrastructure.

## 6 Create a network of regional connections

Transport connectivity for better regional integration (the topic of the 2019 ITF symposium) is a key success factor for the transformation of mobility for people and freight, in the coming years. In the past decades, rapid intercity solutions (high speed trains, aircrafts, motorways) have received priority in most countries, while rural and regional transport were "abandoned" to road automotive solutions.

The time has come to design modern, digitally connected, energy-efficient, clean, inclusive, multi-modal (waterway, rail, road, air) solutions offering seamless 24/7 services to people and companies. Public/private partnerships are essential in the financing and operating of such solutions. And "deregulating" current rigid schemes is of the essence to create a pro-business environment capable of inventing a variety of new mobility solutions for people and freight. Of course, local considerations must prevail in designing well adapted solutions but creating an international "wiki" of best solutions would be highly beneficial.

## 7 Create an offer of affordable e-vehicles with adapted performance

Electric vehicles, even with a rather limited mileage, prove to be particularly adapted to rural usage but too expensive. This price handicap must rapidly be resolved because EVs are much easier to produce, and the assurance given to vehicle manufacturers that the market is bound to grow enormously, thanks to the right policies and regulations, should rapidly induce economies of scale. In addition, new regulations must force EV manufacturers to offer a wide range of mileage/power options to offer price options, depending on battery capacity, fuel-cell power, range extenders and other factors. There is no economic reason why entry- or mid-level- EVs could not be priced much lower than conventional vehicles. A completely renewed marketing approach is to be invented, with the right fiscal toolbox.

## 8 Incentivise individual or joint equipment to minimize public cost of infrastructure

At a time when states and cities are gravely indebted, it is essential to minimize the burden on public budgets and focus public investments/expenditures on infrastructure/services with a wide public benefit. Therefore, it becomes essential, in low density habitat areas to incentivize individuals, or groups of individuals, who are ready to invest in individually produced energy (electricity, biomethane...) and use it for domestic and mobility purposes, for themselves and potentially others. This change of mindset, vs current paradigms, can be extraordinarily powerful in fostering the necessary transition but needs evolutions in existing regulations (including fiscal law) at national level.

## 9 Invite employers to contribute to the transformation

Private and public employers must directly or indirectly contribute to the above plan of action by developing mobility transformation plans, together with their employees, to help minimize the negative externalities of their populations and activities. This can be achieved by improving labour schemes (teleworking, shared offices, etc.), mobility schemes of employees, logistics patterns, infrastructure sharing, energy generation models and other options. More porosity between professional and non-professional activities must become a powerful lever of social/environmental revolution.

## 10 Fight against soil artificialization. Keep "adaptation" in mind in designing infrastructure and mobility solutions

A direct consequence of the dominant use of cars in low density habitat areas has been the intense artificialization of the soil. Each decade an unreasonable percentage of ground, exceeding the strict need for road construction, gets covered by macadam around houses, shopping malls, stadiums etc. with incredibly negative impacts on biodiversity and resilience during natural disasters (floods, droughts, etc.). Regulations and common sense must help stop this negative trend, all the more so as a general effort in favour of adaptation to climate change is to be launched.

By definition, low density habitat covers much wider areas than urban areas. Therefore, the cost to protect transport and energy infrastructure against temperature increase and extreme weather events might grow enormously if proper measures are not taken ab initio to ensure that such systems are well designed and properly maintained to sustain climate aggressions.

### Case studies

It is proposed to focus on illustrative facets of our topic, very complementary in their scope:

- The case of Morocco; this country has designed its roadmap towards mobility development and decarbonization, which embraces several of the dimensions covered in the proposed course
- A pragmatic business case on the feasibility of equipping an isolated house with PV panels and making it energetically independent for all its domestic and mobility needs, at a very attractive cost
- A synthesis of all the learnings about «Transport connectivity for a better regional integration» gathered at the 2019 ITF Summit in Leipzig.
- The case of Medio Tejo, a Low-density Portuguese Region, where a flexible on-demand mobility system has been put in place, based on a specific national law approved in 2016

Trainees would gain very solid, quantitative and factual information on subjects which tend too often to be very theoretical.

## Major references

SUM4All (2019) "Global Roadmap of Action Toward Sustainable Mobility", <https://sum4all.org/global-roadmap-action>

TDA (2018) "Decarbonising Transport by 2050 - A TDA manifesto on how to reach net zero emission mobility through uniting Countries, Cities / Regions and Companies", [http://tda-mobility.org/wp-content/uploads/2018/12/EY\\_TDA-Manifesto.pdf](http://tda-mobility.org/wp-content/uploads/2018/12/EY_TDA-Manifesto.pdf)