ALPENKONVENTION
CONVENTION ALPINE
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THE ALPINE CONVENTION IS THE FIRST INTERNATIONAL AGREEMENT FOR THE PROTECTION AND PROMOTION OF THE SUSTAINABLE DEVELOPMENT OF A CROSS-BORDER MOUNTAINOUS REGION

italian delegation
alpine convention

GROUPE DE TRAVAIL TRANSPORTS / GRUPPO DI LAVORO TRASPORTI

ARBEITSGRUPPE VERKEHR / DELOVNASKUPINA PROMET

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AIR QUALITY – MEASURES ON SUSTAINABLE MOBILITY IN THE ALPINE TOWNS & CITIES

1. INTRODUCTION

The analysis activities of the measures for mobility policies, aimed at safeguarding air quality and identification of the related Recommendations to the Member States of the Alpine Convention, are recalled by the WGT Transport Mandate of the Alpine Convention, approved at the 15th Alpine Conference in Innsbruck (April 2019), which identified the following priorities:

Point 4. Coordination activities assigned to the Italian Delegation - Provide for the RSA8 a summary of the impact on air quality of transport in the Alps and the effectiveness of impact mitigation measures (Framework Convention art. 2 paragraph 2 letter c)

The object of the analysis is:

- the European regulatory framework for the reduction of emissions generated by mobility and the implementation of charging infrastructure and distribution of alternative fuels;
- policies applied to urban and regional mobility aimed at reducing greenhouse gas and pollutant emissions;
- focus on urban logistics and its impacts on air quality in urban and regional settings.

2. URBAN SUSTAINABLE MOBILITY IN THE MOUNTAINS – BASIC PRINCIPLES

Analysis of the air pollution in the Alpine area reveals the overlapping of different sources and, with reference to the contribution of the transport sector, different traffic typologies: residential, tourist, commuting, urban logistics, heavy and light duty).

All Interreg studies on environment and mobility in the Alpine Space shows that most of the emissions sourced by the transport activities originate from traffic and moves around the urban areas of the Alpine regions.

Specific critical factors for mobility in the mobility urban areas include weather conditions and climate, as there is an evident correlation between thermal inversion and the concentration of polluting emissions in the mountain valleys, in the same that the former is favoring the latter.

Moreover, socio-economic and development factors often play a role in determining a specific stress in urban centers, due to concentrations of pollution from different sources in the same locations.

Historically, several towns have developed along in the main transalpine corridors, where international freight flows, regional logistics, e-commerce drop activities, tourist displacements as well as local and urban traffic overlap.

Externalities in the Alpine urban and metropolitan areas are to be in correlations to the scale economies, efficient trade and development of business districts and supply chains.

At the same time, also different sources of pollution and greenhouse emissions tend to sum one to the other in the Alpine urban areas.

3. THE EUROPEAN LEGISLATION

The sustainable mobility paradigm was first fully affirmed by the European Commission in the 2011 Transport White Paper, in which the European strategy takes a broader character, setting a target of -20% reduction of greenhouse gas emissions from the transport sector by 2030 compared to 2008.

The Commission subsequently pursued the development model outlined in the White Paper: the decisive turning point was given by Regulation 443/09, updated in 2014, and Regulation 510/11, with limits for CO2 emissions from new cars and light duty vehicles.

With the publication of the "Clean Mobility Package" on last November 2017 and subsequent upgrades, the European Commission proposed a series of measures aimed at accelerating the transition to low emission vehicles, promoting the use of alternative fuels and supporting the competitiveness of European industry to meet the challenges of sustainability and "Green New Deal" programs.

Such push has also been promoted by the EU Regulations on "Green Public Procurement", implemented by Member States, which has defined increasingly strict criteria ("Minimum Environmental Criteria") to ensure that the purchase of vehicles by Public Companies is oriented towards products with low environmental impact.

The most recent legislation, with EU Regulation 2019/631 of the European Parliament and of 17 April 2019 of the European Council, has defined new performance limits on CO2 emissions from passenger cars and light duty vehicles, defining a reduction of -15% of emissions by 2025 and -30% by 2030.

The Directive 2014/94/Eu dealt with the development of infrastructure in support of green fuel vehicles (BEV, PHEV, CNG, LNG, Bio-CNG, Bio-LNG, FCEV, LPG), setting specific targets for the development of production and distribution plants and networks that Member States will have to comply with by specific deadlines.

Finally, the European Parliament Resolution of 13 March 2019 on Energy and Clean Air urges Member States to implement actions and policies to improve air quality in urban areas.

4. INTERVENTIONS AND MEASURES

In mountain cities, some main trends of mobility can be identified on the basis of specific vocation of the city centers, generating 3 macro-policies finalized to improve the air quality, according the characteristics of the urban areas:

- Towns with tourists and environmental vocation: car free zones are widely introduced and public transport services are improved, allowing in any case the sharing mobility by alternative fuels vehicles.
- Towns with remarkable development of trade: mobility policies aim to an efficient use of commercial areas, through parking management and time limits encouraging short-time parking; selected accessibility based on the vehicles typologies, favouring the

soft mobility (bike and electric scooter) and circulation of the alternative fuels vehicles, both cars and commercial vehicles.

- Towns with industrial and productive vocation : modal integration policies and park pricing management are intended to discourage long-time car parking and select flows in the central business districts. In the last time, also under the boost of Covid-19 crisis, the increasing "Smart Working" activities are contributing to reduce the impact of private commuting displacements on the industrial and productive areas

Accurate, knowledge-based and dedicated planning is required in mountain urban areas. It should consider several aspects and adopt an integrated approach, in which some principles (briefly recalled below) are often included.

- Planning harmonization – short and long-term plans should aim evolution of an integrated transport system. Harmonization can also be the result of the engagement of different levels of government, having distinctive responsibilities on planning policies at different step (local, regional, macro-regional, national, trans-European).
- Flexible & multi-vehicle mobility management – different vehicles should be selected according to the mission of displacement and relative distance to the city center. The car/bike sharing and soft mobility can integrate the public transport services, to be implement by tramway and/or low and zero emission buses.
- Limits to the accessibility of the city center – a reduction of the number of vehicles accessing to the historical city centers can be achieved by a access-pricing policies, banning the circulation and parking and developing Park&Ride areas and appropriate shuttle services to get to the center of town. In many towns, the access on the historical centers is allowed only to the electric cars, scooters and bikes and to the alternative fuels commercial vehicles to the urban logistics activities. The enforcement is ever more efficient following the improvement of ITS system.
- Shuttle Buses and Light Transit lines to the city center – integrated shuttle lines – using low emission buses or tramways) to link the center of the town are often successful. Moreover, some towns more keen on tourism consider as an important factor for their mobility systems linking the bus lines with the direct link to main European cities offered by the Railway Network.
- Advanced parking management – a correct planning of parking network is a strategic factor for sustainable mobility policies, it is relating to the spatial distribution of car parks, roadside parking spaces, P&R network and charging policies (increasing charges closer the center of town). Time limits are also an effective tool to regulate the parking of shopping and touristic commuters.
- Loading Management – usually, consists of a limited timetable and dedicated places to freight drop activities (distribution and loading) inside the center of town. Road network management is handled in order to separate crossing trucks and local traffic. Measures on traffic ban for pollutant commercial vehicles (<Euro 4/IV) are growing in the alpine and pre-alpine metropolitan areas and in the transalpine axes. In any case, pricing measures are in force to access in the Central Business Areas, forecasting free accessibility only for the alternative propulsion light duty vehicles (Full Electric, Hybrid, Bio-GNC and Bio-LNG powertrains).

5. OVERVIEW OF THE MAIN CURRENT MEASURES

This overview of mobility restrictions in the urban areas of the Alpine Space includes Member States whose cities have implemented or announced LEZ where restrictions are more stringent relating to the conventional vehicles (above all, diesel vehicles, both cars and commercial vehicles).

The schemes where restrictions are framed are often complex and contain many other detailed elements, not necessarily included in this overview.

Political statements announcing the intention of phasing out certain technologies are included. When the category of the vehicles affected by the restrictions is not specified in the table, it applies to all types (PC, LCV, HDV).

The main source of information used for updating this overview is the information from national associations of mobility and automotive sector. In the table, each Member State and most cities are hyperlinked to the relevant page in the website www.urbanaccessregulations.eu . Hyperlinks to other relevant documents are provided as well.

All Delegations of the Alpine Convention WGT completed the information relating each town / city, both adding other and updated info and/or adding towns / cities promoting significant measures finalized to reduce pollutant and greenhouse gas emissions.

	Type of restriction	In force now or by 2020	2020-2025	2025 and beyond
Member State/ City or region		Rules		
FRANCE	Ban	A National Framework sets out a classification of vehicles that can be used for different purposes, among others, by cities for LEZ. The cities decide whether, where and when to do a LEZ, and what vehicle classes will be required. Windscreen stickers (Crit'Air stickers, from 5 to 1) defined at national level show the vehicle class. To enter the LEZ, the vehicle must have the sticker required by the LEZ standard. The Euro standard requirements to get the Crit'Air stickers 5, 4, 3 or 2 are more stringent for diesel vehicles than for other vehicles. Moreover, no diesel vehicles can be granted the Crit'Air sticker 1, which in practice means that cities that will decide to require the Crit'Air sticker 1 will *de facto* ban diesel vehicles from the city. In the Framework of the national rules, Lyon, Grenoble Strasbourg and Paris have implemented LEZ.		
Chambery		Pollution emergency measures for periods of high pollution: Level 2: alert: Crit'Air sticker mandatory More than two days of alert: Ban vehicles <3.5Ton Crit'Air 1 and 2 If situation continues, aggravated alert comes into place Crit'Air sticker 3 The Prefect can further reduce the number of classes of vehicles allowed to circulate Electric vehicles can circulate during pollution episodes but need Crit'Air sticker.		
Grenoble Metropole		After 6 days of pollution peak: Diesel Euro 2 (Crit'air 5) PC & LCV Diesel Euro 3 (Crit'air 4) PC & LCV Diesel Euro III (Crit'air 5) HDV Diesel Euro IV (Crit'air 4) HDV		
GERMANY	Ban / Incentives	In Germany, there are currently about 60 LEZs in place, covering more than 80 cities. Windscreen stickers ("Plakette") defined at national level show the vehicle Euro standard. Almost all LEZs now require a "Green sticker" for access. To obtain a green sticker, vehicles need to comply with Euro 3/III + DPF or Euro 4/IV, Euro 5/V, Euro 6/VI for diesel vehicles and at least with Euro 1/I with catalytic converter for petrol vehicles. However, many air quality management zones/cities still do not meet NO2 air quality European targets. A federal court ("Bundesverwaltungsgericht") ruled that additional access restrictions are legally possible by existing German law if no other means exist to meet the air quality targets and as long as the restrictions are proportionate. According to the ruling, additional access restrictions might apply to diesel vehicles below Euro 6/VI and to petrol cars below Euro 3/VI.		

		The authorities on local/regional level recently approved their local Clean Air Programmes ("Luftreinhalteplan"), including specific additional access restrictions and sustainable mobility measures. At the federal level, discussions are on-going to update the sticker system and to introduce a new blue sticker with stricter requirements (e.g. only Euro 6/VI for diesel). This could be a basis for a Federal-harmonised implementation of local access restrictions. In all the motorway network (urban rings included) LNG and alternative fuel trucks circulate for free, by the MAUT exemption (untill 31 of december of 2020, Bundestag is approving a new deadline, probably 31 of december 2022).		
MUNICH		Minimum standard of Diesel Euro 4(PM), Petrol Euro 1 / green coloured sticker Police checks if proper sticker is displayed in the windscreen. Even if the vehicle meets the emissions standard, but there is no sticker in the windscreen, the vehicle is illegal in the zone. General exemption for trips to the Market Hall on Schäftlarn Straße. In this case, you do not need an exemption and you can drive into the LEZ without a sticker.	In Ring, LNG and alternative fuel trucks circulate for free, by the MAUT exemption new deadline, probably 31 of december 2022	
ITALY	Ban / Incentives	Italy has many different LEZ with differing standards and time periods. More than 110 cities have implemented them, most apply to PC only and almost all require more stringent Euro standards for diesel vehicles. A special agreement signed by Piedmont, Lombardy, Veneto and Emilia Romagna regions finalized to reduce the pollutant emissions ("Clean Air Dialogue") Free circulation ever for BEV No fuel excise for C-LNG		
MILAN		Traffic ban for >Diesel Euro 5/V or Diesel Euro 4/IV+ DPF Access Pricing in the Area "C" All conventional engines (free for BEV and PHEV) Ownership Tax exemption for Alternative fuels vehicles (both cars and commercial vehicles BEV, CNG, LNG, Hydrogen)	From 1.01.2023 Diesel Euro 6/VI	From 1.01.2028 Diesel ban – Cars From 1.01.2029 Diesel ban – LCV, HDV
TURIN		Traffic Ban for Diesel Euro < 4/IV – all vehicles		
		at times of high pollution: Ban for < Diesel Euro 6/VI or Ban for all Diesel vehicles		
CITIES >30.000 PIEDMONT, LOMBARDY, VENETO		Traffic Ban for Diesel Euro 4/IV – all vehicles Lombardy (+ Trento / Bolzano Prv) Ownership Tax exemption for Alternative fuels vehicles (both cars and commercial vehicles BEV, CNG, LNG, Hydrogen)		from 1.10 2025: Traffic Ban for Diesel < Euro 6/VI

AUSTRIA	Ban	From 1st May 2017 the official Austrian sticker, that shows the Euro standard of the vehicle, has to be put on the windshield of the vehicle.		
TIROL / INNSBRUCK		Minimum standard that has to be met by lorries > 7.5t on the A12 between km 6,35 and 90,00: Ban for non-transit traffic: * From 1 January 2020 o Diesel Euro 4 (lorry without trailer) * From 1 January 2021 o Diesel Euro 5 * From 1 January 2023 o Diesel Euro 3 Ban for transit traffic: * From 31 December 2017 < Diesel Euro 4 * From 31 October 2019 < Diesel Euro 5 * From 1 January 2020 < Diesel Euro 6 and LNG (registreted before sept 2018) Further transit limitation for certain goods Electric and H2 vehicles > 7.5t are allowed to circulate in the area Exempions Journeys to and from the train terminal of Hall in Tirol, driving towards the West and the train terminal of Wörgl driving towards the East for the loading of goods, if this can be proved by a relevant document. When air pollution is high the speed limit for passenger cars is reduced from 130km/h to 100km/h.	From 2023 Ban transit for certain goods for all Diesel Commercial Vehicles Exemption for alternative fuels trucks, only	

SLOVENIA	Ban			
LJUBLJANA		Ljubljana Access Regulated – Pedestrian Zone Ban for all vehicles Residents of the access regulated area are allowed to enter the zone with a special permit Permits only for delivery, transport, emergency transports Electric vehicles are allowed to circulate in the area		
SWITZERLAND	Regulation	In general, Switzerland, air pollutants are regulated by the Swiss Ordinance on Air Pollution Control (OAPC), which is based on the Federal Act on the Protection of the Environment. The Ordinance (status 2018) defines air quality standards for air pollutants according to the WHO recommendations of 2005, which are for some air pollutants stricter than the current limit values set by the EU clean air framework. For PM10, the annual air quality standards are set at 20 µg/m³ in Switzerland and in line with WHO guidelines, and 40 µg/m³ in EU member states. The limit value for the daily mean of PM10 is set at 50 µg/m³ for all countries; For PM2.5, the upper limits of air quality standards are set at 10 µg/m³ in Switzerland in line with the WHO guidelines and at 25 µg/m³ in the EU member states.		
MONACO	Incitation/Action	Mobility is one of the main challenge of the Government of Monaco since it concerns both sustainable development and public health. It plays also an important role at the economic level. The main actions are focuses on: - Development of "clean" public urban transports: all the buses from the Compagnie des Autobus de Monaco are using diester, a cleaner fossil fuel, aiming to an electrical fleet within 2025. - Development of multimodal clean transports: electrical car sharing in free-floating, electrical bike-rental - Incitative rate to encourage the use of the parking (about 15500 parking places) at the entrance of the Principality, and then use of public transport thanks to correlated public transport offers. These parking are under advanced parking management - Development of a huge network of public escalators and lifts to facilitate walking - Financial support, started in 1994, to purchase electrical or hybrid-gasoline-electrical vehicles (about 5% of the road vehicle fleet) - Ban of heavy vehicle transit at the crowded hours (between 8 and 9 o'clock in the morning) to favour the circulation Monaco is collaborating with the PACA Region to favour the intermodal transport, combining offers on bus/train both valid on the two territories.		
	Regulation	Monaco is comparing its data to the European Air Quality Directives limit values, information and alert threshold, on the basis of common methods and criteria, for the pollutants PM, O3, NOx, SO2, CO and heavy metals, with a long term WHO target for 2030.		

6. RECOMMENDATIONS

In the face of an ever-changing demand for mobility, the measures adopted by Member States to improve air quality, reducing emissions of pollutants and greenhouse gases, have the multiple strategic objectives of:

- to directly or indirectly promote the renewal of the fleet of vehicles on the road;
- to build the infrastructure for the diffusion of alternative fuels;
- to encourage the diffusion of low environmental impact fuels from renewable sources, for example Biomethane;
- optimize mobility and accessibility through management with ITS systems;
- encourage parking turnover in parking lots and the integration of parking lots with LPT lines;
- spread soft mobility and sharing mobility;
- to regulate the loading-unloading activities in urban areas, taking into account the growth of e-commerce.

The measures taken in Alpine cities and regions to improve air quality are increasingly geared towards limiting the circulation and parking - as well as delivery activities for urban and regional logistics - of the most polluting vehicles on ever larger urban, metropolitan and regional areas and/or routes.

These tools allow administrations to intervene promptly in cases of exceeding the concentration thresholds of pollutants, in particular for NOx and PM10, in order to avoid incurring the infringement procedures provided by EU regulations.

Taking into account these factors, which are now well established, the following Recommendations are set out in order to determine sustainable mobility policies that can be - as far as possible - homogeneous for the Alpine Space:

1. to strengthen local public transport services, to be exercised with the increasingly widespread use of tramways and/or buses with alternative power supply (Full Electric, Opportunity and In-Motion Charging, Bio-CNG, H2 Fuel Cell);
2. to enhance sharing services, to be exercised through the integrated use of car-sharing, scooter-sharing and bike-sharing, in turn integrated with LPT and rail services;
3. introduce structured traffic limitation measures for cars and vans <euro 5, with homogeneous rules and timetables at least on a regional scale, with premiums for cars and vans with alternative fuel supply to diesel (Full Electric, Hybrid, Bio-CNG, H2 Fuel Cell);
4. optimize traffic and parking management - also from the point of view of tariff integration and payment methods.- through the use of ITS systems and special Apps adequately advertised at the service of users;
5. to introduce with the necessary gradualness measures for the selection of HDV heavy commercial traffic on the Alpine crossing roads tangent to cities that still allow free circulation only to HDV heavy commercial vehicles with alternative power supply to diesel (Full Electric, C-LNG. Bio-C-LNG, H2 Fuel Cell);
6. to organize in a homogeneous and structured way the regulation of urban logistics, in order to reduce the impact of the growing phenomenon of commercial traffic generated by e-commerce activities;
7. to implement the infrastructure for the supply of alternative fuels, in accordance with the AFID Directive 2014-94-Eu

7. BIBLIOGRAFY

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