



Sustainable and Smart Mobility Strategy and Sustainable and Smart mobility project

Joint workshop
Transport and Energy Community

Date: 20 December, 2023

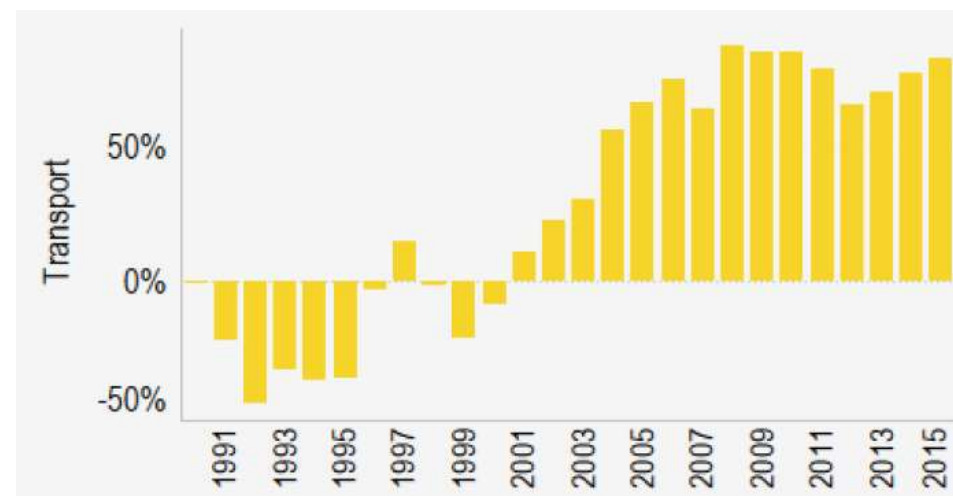
Nedim Begovic, Green/Multimodal/Innovative
Transport Solutions Desk Officer

Climate change



GHG emissions

- Sources of GHG emissions in WB- energy and transport, 2/3 of overall share
- Transport sector
 - 12% share of these emissions in 1990
 - 16% share of these emissions in 2018



Changes in Western Balkans GHG emissions relative to 1990, transport sector

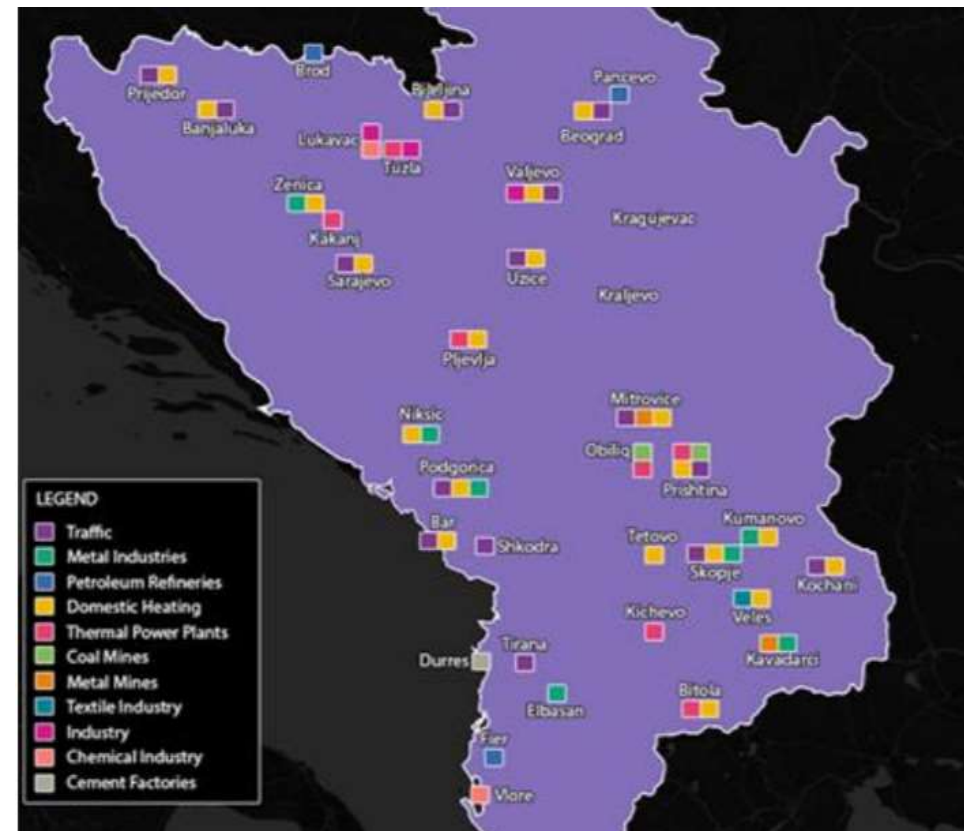
Climate change and transport



On air quality

- Particulate matter (PM10 and PM2.5), SO2, O3 and NO2 concentrations are often above the yearly average, daily maximum and hourly maximum limits
- 8 out of 15 most polluted cities in Europe are in Western Balkans according to the Air Quality report
- Air pollution contributes
 - between 4 per cent and 19 per cent of total premature mortality
 - reduces life expectancy by between 0.4 and 1.3 years

Source: UN environment, “Air Pollution and Human Health: The Case of the Western Balkans”, 2019



Emission sources in the Western Balkans

Climate change and transport

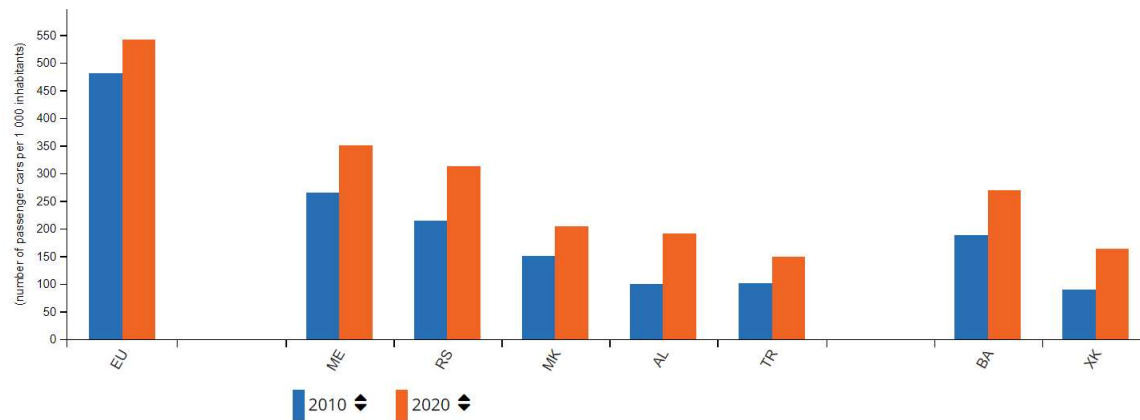


- Significant Share of Oil in Energy Supply
- The transport sector in the region is based mostly on oil derivatives for road, sea, and air traffic, electricity and diesel for rail traffic.
- Predominance of Road Transport
- Road transport is the primary mode of transport in the Western Balkans and contributes to more than 90% of emissions.

Climate change and transport

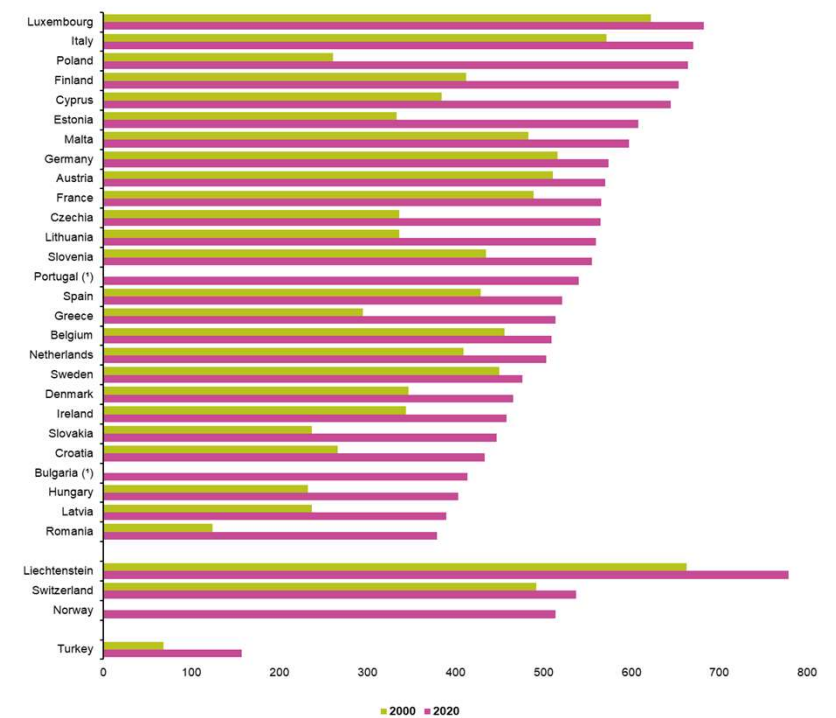
App. 90% of GHG and pollution related to road transport

Motorisation rate, 2010 and 2020



Source: Eurostat

Motorisation rate, 2000 and 2020
(passenger cars per 1000 inhabitants)



(*) Portugal and Bulgaria: no data available for 2000.
Source: Eurostat (online data code: tran_f_vehst)

Climate change and transport



None of the Regional Parties (RP) has adopted Alternative Fuel Infrastructure Regulation,

Incentives (tax exemption, subsidies) for electric/hybrid vehicles have been introduced in Albania, Bosnia and Herzegovina, Kosovo*, Montenegro and Serbia.

* This designation is without prejudice to positions on status, and is in line with UNSCR 1244/1999 and the ICJ Opinion on the Kosovo declaration of independence

Climate change and transport

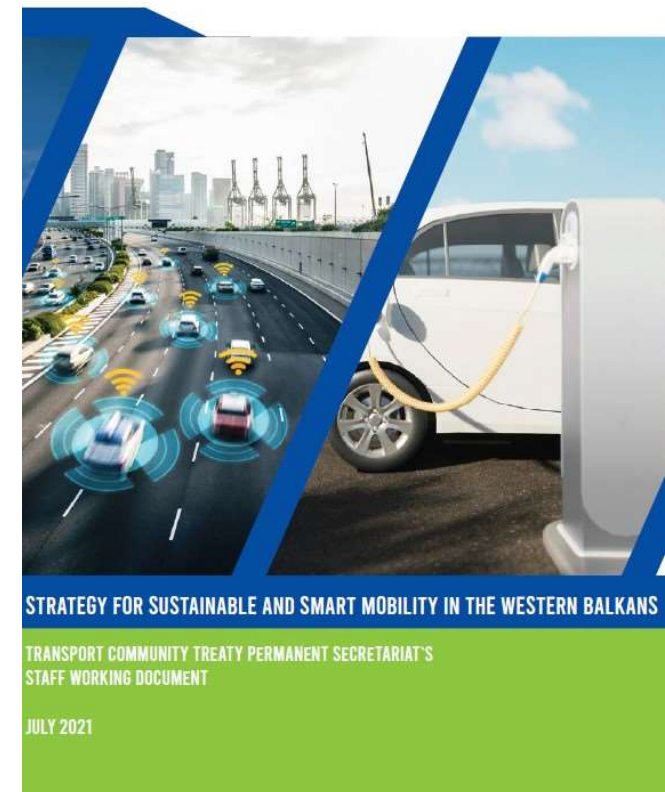


- The EU has set a target that all Member States (MS) will be **climate neutral by 2050**
 - **Rail transport: zero-emission vehicles rely on electric traction** as there is no infrastructure or vehicles capable of using other types of alternative fuels.
 - 80% of investments in the last 20 years were in the road sector => rail sector underinvested
 - **Waterways, maritime and air transport:** there are no zero emission vehicles in these sectors.

Sustainable and Smart Mobility Strategy for the Western Balkans



- The Sustainable and Smart Mobility Strategy for the Western Balkans (SSMS) was developed to **mirror the European Union's (EU) Sustainable and Smart Mobility Strategy** .
- **67 Actions in 10 Flagship** that are grouped in three objectives for mobility:
 - Sustainable mobility,
 - Smart mobility, and
 - Resilient mobility.
- The Actions include a wide variety of policy and investment initiatives - **move towards a sustainable transport system.**
- The purpose of the SSMS for the WB6 -**provide the region with a roadmap for the decarbonisation and digitalisation of its transport sector.**



SSMS WB Objectives & Roadmap



Flagship 1 - boosting uptake of zero-emission vehicles, renewable & low-carbon fuels and related infrastructure

Flagship 2 - creating zero-emission airports and ports

Flagship 3 - making interurban and urban mobility more sustainable and healthy

Flagship 4 - greening freight transport

Flagship 5 - pricing carbon and providing better incentives for users



Flagship 6 - making connected and automated multimodal mobility a reality
Flagship 7 - innovation, data and AI for smart mobility



Flagship 8 – working towards the single market

Flagship 9 - making mobility fair and just for all

Flagship 10 - enhancing transport safety and security



STRATEGY FOR SUSTAINABLE AND SMART MOBILITY IN THE WESTERN BALKANS

TRANSPORT COMMUNITY TREATY PERMANENT SECRETARIAT'S
STAFF WORKING DOCUMENT

JULY 2021

Roadmap

Flagship 1 – Boosting The Uptake Of Zero-emission Vehicles, Renewable & Low-carbon Fuels And Related Infrastructure

Flagship 2 – Creating Zero-emission Airports And Ports

Flagship 3 - Making Interurban And Urban Mobility More Sustainable And Healthy

SUSTAINABLE MOBILITY			
Action	Type of intervention	Responsible authority	Indicative Timetable
FLAGSHIP 1 - BOOSTING UPTAKE OF ZERO-EMISSION VEHICLES, RENEWABLE & LOW-CARBON FUELS AND RELATED INFRASTRUCTURE			
Transposition of alternative fuel directive	L	MoT ⁸⁶ , TCT Secretariat support	Within 2 years from the date of application of EU legislation
Deployment of e charging stations on the busiest corridors	S, L	S - TCT Secretariat with Technical Committee I - Road authorities	2024 – 2026
Undertake feasibility study on the use of hydrogen on trucks along the busiest corridors	S	TCT Secretariat to cooperate with Energy Community Secretariat	2025 -2026
Aligning the emission standards across the region, by setting the minimum standard for new cars at EURO6	P, L	P – MoT, Ministries in charge of Economy, Ministries in charge of Environment, Ministries in charge of Finance and other relevant institutions L - MoT, MoEc., MoEnv, MoF and other relevant institutions	2024-2025
Encouraging the introduction of incentives for zero-emission vehicles	L	MoT, MoEc., MoEnv MoF and other relevant institutions	2023 - 2025
Improve emission testing in roadworthiness checks	L	MoT	2023
FLAGSHIP 2 - CREATING ZERO-EMISSION AIRPORTS AND PORTS			
Follow up on deliverables of INTERREG projects regarding Action Plans for Greening of the Ports of Bar and Durres	I	TCT Secretariat to coordinate	2021-2023
Setting the foundation for deployment of alternative fuels infrastructure through transposition of relevant EU acquis in the air and waterborne sectors	L	MoT, TCT Secretariat support for waterborne	2022 – 2024
FLAGSHIP 3 - MAKING INTERURBAN AND URBAN MOBILITY MORE SUSTAINABLE AND HEALTHY			
Encourage regional capitals and assist in defining sustainable urban mobility solutions for the major urban nodes along the core network (last mile solutions)	P, I, T	P, T- local government, MoT, TCT support I – Local governments, MoT	2022-2025
Introduction of regionally aligned Public Service Obligation for international passenger rail transport.	P, I	MoT, RU's	2023

What will happen if we do nothing?

Demand analysis - model drivers



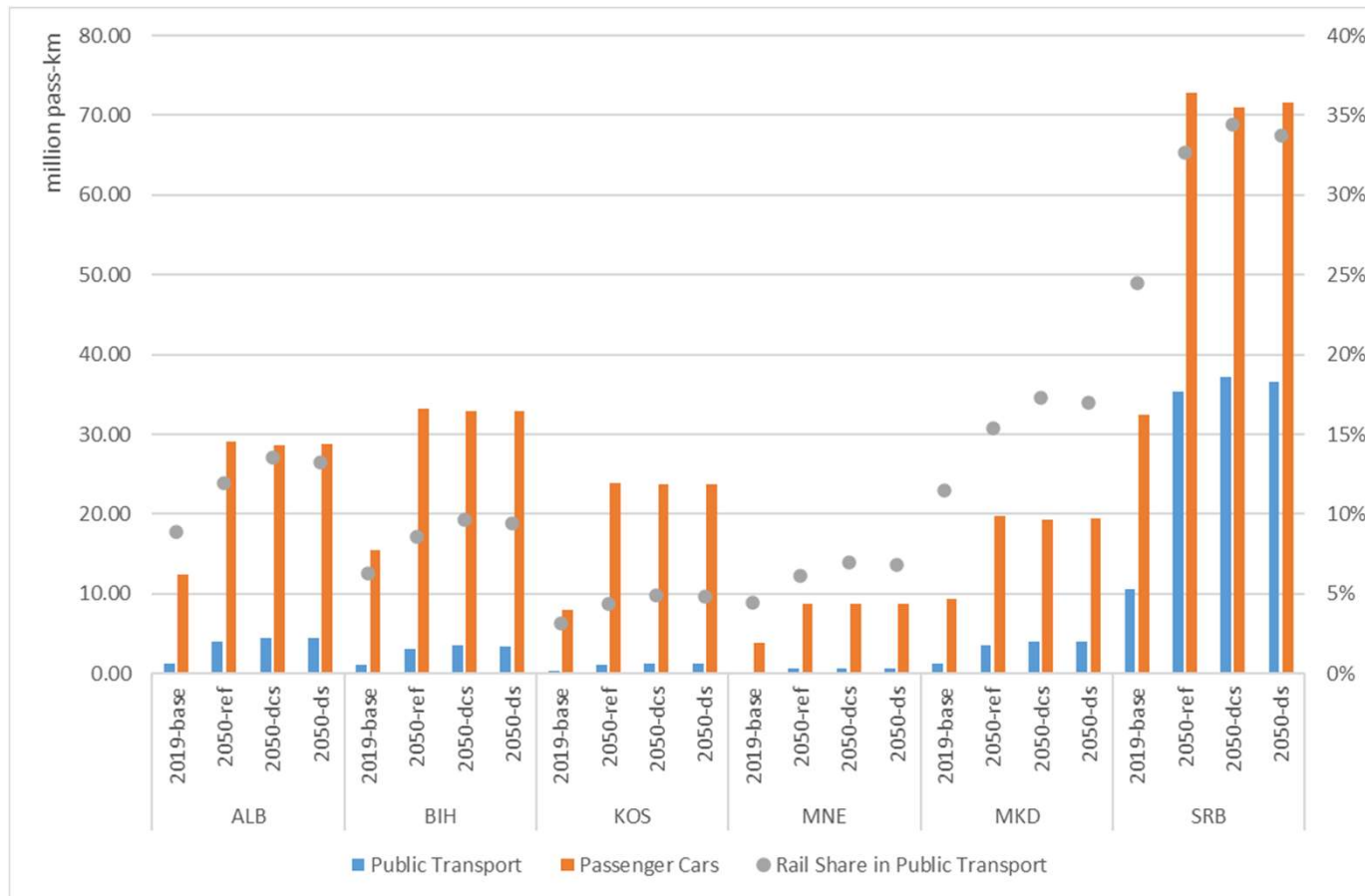
There are two key parameters for greenhouse gas reduction

- (1) **total energy consumed** – which is based on kilometres travelled and the type of vehicle, and
- (2) **GHG emission factor** of the energy that is consumed.

The key drivers which influence both the transport model and subsequently the Energy / GHG model:

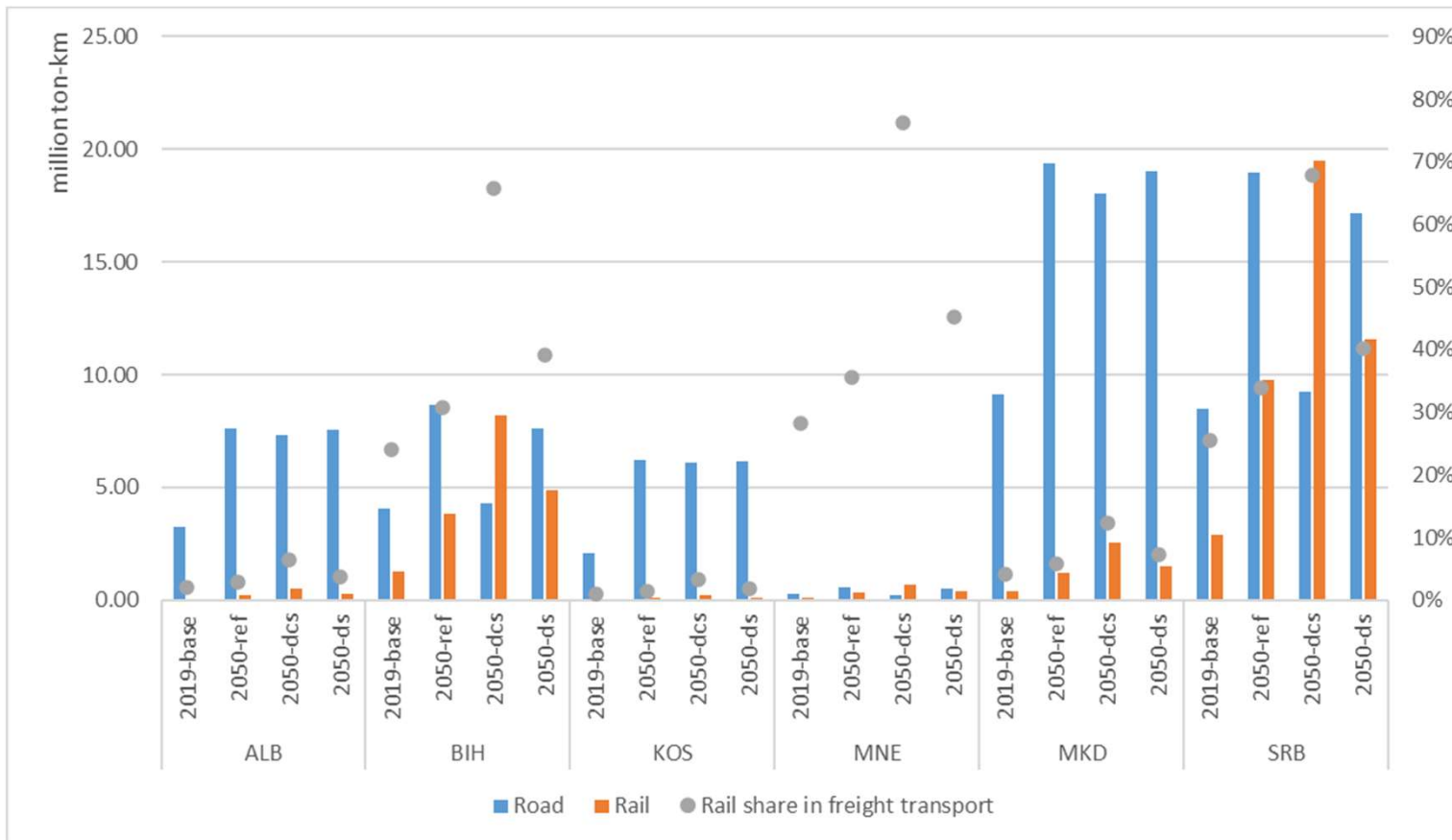
- **Population growth**
- **Gross Domestic Product (GDP) growth**
- **Total kilometres travelled** by which type of vehicle / mode of transport (rail, road, inland waterway, multimodal)
- **vehicle fleet composition** – a drastic up-scaling of the absolute number of vehicles is expected
- **Fuel economy**
- **The CO₂ emission factors**
- **Grid emission factor:** GHG emissions factors for electricity (grid emissions factors) were not modelled into the future

Transport model outputs – more than doubling of passenger-km



* base = Base year, ref = Reference scenario / Do Nothing scenario, ds = Do Something scenario, dcs = Decarbonisation scenario

Transport model outputs – more than doubling of tonne-km

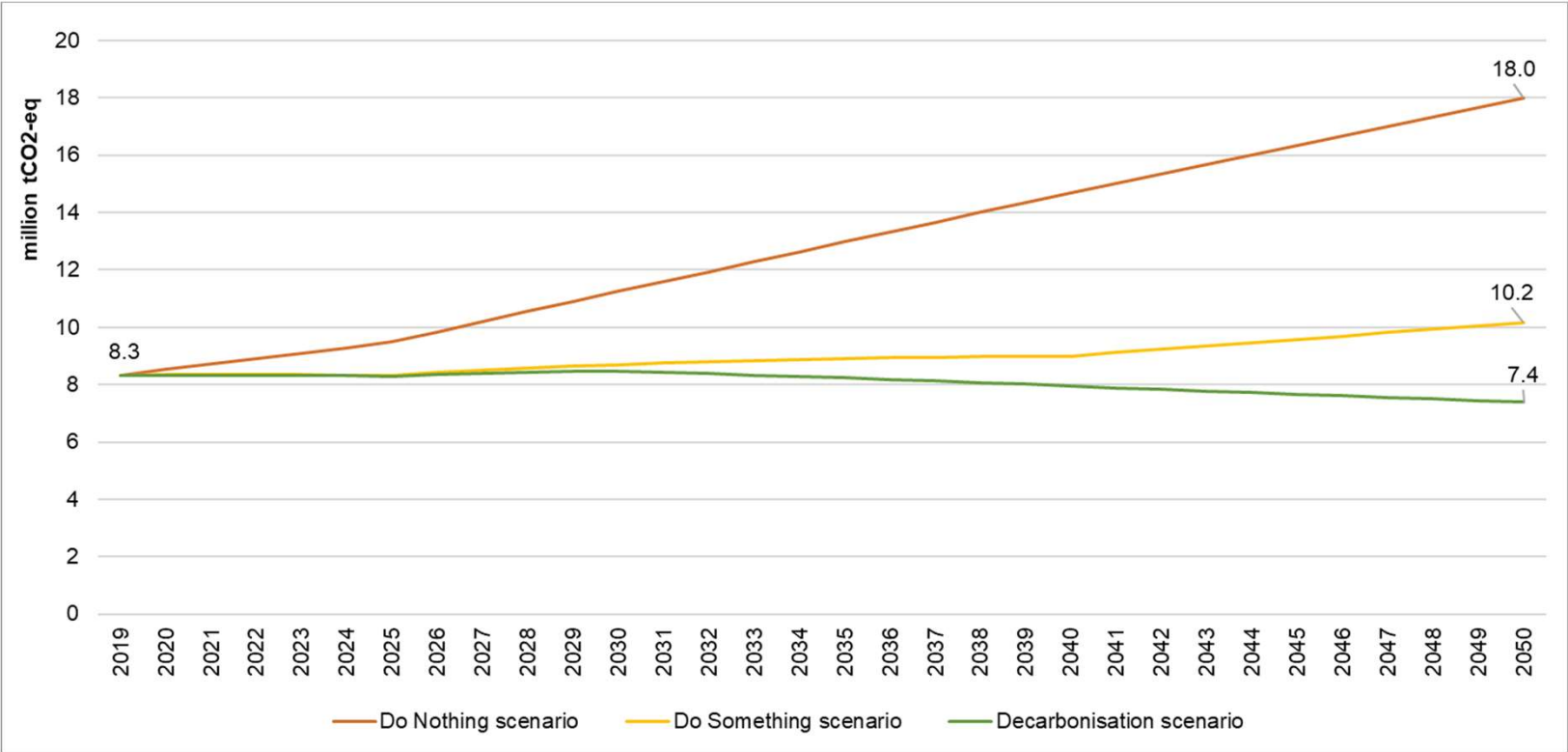


* base = Base year, ref = Reference scenario / Do Nothing scenario, ds = Do Something scenario, dcs = Decarbonisation scenario

Scenario analysis



No action, energy consumption and GHG emissions -> more than double.



Projected energy consumption (MWh/year)



		2019	2030	2040	2050
Energy consumption per RP (MWh/year)	Albania	4,256,667	4,207,119	3,786,886	2,617,169
	Bosnia and Herzegovina	5,416,120	5,053,133	3,991,572	2,577,427
	Kosovo	2,859,465	3,100,050	2,869,005	2,052,239
	Montenegro	1,140,371	1,129,182	864,076	602,603
	North Macedonia	5,163,075	4,887,384	4,750,646	2,908,254
	Serbia	12,547,984	12,722,336	10,465,760	4,849,448
Decarbonisation scenario energy consumption (WB6 total)		31,383,682	31,099,204	26,727,945	15,607,140
Do Something scenario energy consumption (WB 6 total)		31,383,682	32,029,462	31,937,095	31,141,451
Do Nothing scenario energy consumption (WB 6 total)		31,383,682	41,993,735	54,821,886	60,920,665

Investment needs for all 67 Actions



The total costs for implementing all 67 Actions are presented below – sorted according to RP.

- Albania EUR 9.2 billion.
 - Bosnia and Herzegovina EUR 11.9 billion
 - Kosovo EUR 6.2 billion.
 - Montenegro EUR 4.8 billion.
 - North Macedonia EUR 6.7 billion
 - Serbia 28.9 billion
-

Action plans per Regional Partner



Ranking	Action Group	Associated overall budget (EUR)	Notes
1	1.1. Transposition of alternative fuel directive 1.2. Deployment of e charging stations on the busiest corridors	1,813,427,512	Mostly private financing sources
2	4.1. Improving multimodality through transposition of intermodal/multimodal legislative framework	70,000	Mostly a technical assistance activity
3	1.4. Aligning the emission standards across the region, by setting the minimum standard for new cars at EURO6 1.6. Improve emission testing in roadworthiness checks	528,300,000	Government resources for the framework, linked to procurement and significant private investment
4	4.6. Rail Corridor Initiative – Western Balkans to join the Rail Freight Corridors	300,000	Mostly a technical assistance activity
5	4.2. Assessment of bottlenecks in modal interconnections and the current incentive system in place 4.3. Ensuring road/rail connections to TEN-T ports/ airports, freight terminals , and removing bottlenecks for intermodal transport 4.4. Construction of intermodal terminals and purchase of related equipment	1,375,900,000	Likely significant public investment / donor / lending contributions needed
6	3.1. Encourage regional capitals and assist in defining sustainable urban mobility solutions for the major urban nodes along the core network (last mile solutions)	559,835,000	Involves several activities as defined by Green City Action Plan / Sustainable Urban Mobility Plan
7	3.2. Introduction of regionally aligned Public Service Obligation for international passenger rail transport	660,000	Mostly a technical assistance activity – but linked to significant investments
8	3.3. Better manage and coordinate international rail traffic, including if necessary, through revised rules for capacity allocation and infrastructure charging in rail	980,000	Mostly a technical assistance activity
9	6.7. Deployment of Mobility as a Service (pax and freight) applications and digital transport corridors, smart mobility solutions and multimodal travel information services	2,000,000	Technical assistance and government resources for procurement – linked to eventual investment
10	2.2. Setting the foundation for deployment of alternative fuels infrastructure through transposition of relevant EU acquis in the air and waterborne sectors	150,000	Technical assistance and government resources– linked to eventual investment
11	3.4. Transposition of the Provisions of the Fourth Railway Package	150,000	Mostly a technical assistance/ policy activity
12	6.1. Enable B2A multimodal data exchange through implementation of the e-FTI Regulation and Maritime Single Window environment	1,100,000	Mostly through donor support and government funding
13	1.5. Encouraging the introduction of incentives for zero-emission vehicles	3,942,548,611	Mostly private sources (vehicle buyers) but some public subsidies
14	6.9. Enable environment for multimodal ticketing in passenger transport and transpose relevant legislation.	200,000	Mostly a technical assistance/ policy activity

Climate change mitigation



Several critical actions for mitigation - when combined large impact on the projected greenhouse gas emissions and energy consumption of the transport system. These include:

- **improve the infrastructure for alternative fuels** (electric vehicle charging, potentially hydrogen refuelling, etc.)
- **encourage the transition of the fleet from internal combustion engines to zero-emission vehicles and / or sustainable fuels**
- **dramatically shift modal shares** towards public transportation, rail, waterway transport, and multi-modal – this would need to happen within cities, in between cities, and across the TEN-T network – and would involve better rail connections, improved multi-modal transport, etc.

Additional considerations



- Achieving the targets of the SSMS will necessitate significant efforts at:
 - creating an **appropriate regulatory environment**
 - facilitating **flow of information** and **improving capacities**
- Electricity from coal power - shifting to electric vehicles does not significantly decrease the associated GHG emissions.
- The challenge - greening the electricity grid and using clean energy sources.

Sustainable Mobility Way Forward



- Legislative Framework
- Enhanced Coordination
- Urban Connectivity and implementation of SUMP
- Multimodal Transportation Enhancement



Thank you for your attention

www.transport-community.org

nbegovic@transport-community.org