



REPUBLIC OF SERBIA  
MINISTRY OF ENVIRONMENTAL PROTECTION

MINISTRY OF FINANCE  
Department for Contracting and Financing of  
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**#EY  
ЗА ТЕБЕ**

# EU FOR BETTER ENVIRONMENT



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ЗА ТЕБЕ**

# Current development on the preparation of the Programme of Air Protection of the Republic of Serbia with Action plan

1<sup>st</sup> Conference

Presentation of the preliminary results and projections  
Draft Programme of Air Protection of the Republic of Serbia with Action plan

Matej Gasperic, 16 April 2021

# Content of the presentation

- Methodological approach for the preparation of the Programme
- Activities conducted so far and technical documentation prepared - to support the Programme
- The proposed content and the structure of the Programme
- Next steps and expected timing

# Vocabulary

- CRLTAP – Convention on Long Range transboundary pollution (opened for signature on November 13, 1979)
- NEC: National emissions ceiling Directive (obligations for MS to reduce emissions of air pollutants)
- M2: Scenario under the draft Climate Strategy of the Republic of Serbia
- NERP: National Emission Reduction Programme ( for „big polluters“)
- PM<sub>10</sub>: particulate matter - 10 micrometers or less in diameter
- PM<sub>2,5</sub>: particulate matter - 2,5 micrometers or less in diameter
- NMVOC: (non methane) volatile organic compounds
- DSIP: Directive Specific Implementation Plan

# Methodological approach for the preparation of the programme

## Air pollutants covered

Note: Coverage is aligned with Directive (EU) 2016/2284 on the reduction of national emissions of certain atmospheric pollutants (NEC Directive) and with Ambient air Quality Directive 2008/50/EC as amended.

- SO<sub>2</sub> – Sulphur dioxide
- NO<sub>x</sub> – Nitrogen oxides
- PM<sub>10</sub> – Particulate matter <10 microns
- PM<sub>2,5</sub> - Particulate matter <2,5 microns
- NMVOC – Non-Methane Volatile organic compounds
- NH<sub>3</sub> - Ammonia

# Methodological approach for the preparation of the programme

## Air pollutants and health impacts

### ➤ SO<sub>2</sub> –Sulphur dioxide

Exposure to even short period of high concentration SO<sub>2</sub> can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO<sub>2</sub>.

### ➤ NO<sub>x</sub> – Nitrogen oxides and NMVOC

Ozon at ground level which is mainly formed during the summer months by the reaction with sunlight (photochemical reaction) of pollutants such as nitrogen oxides (NO<sub>x</sub>) from vehicle and industry emissions and volatile organic compounds (VOCs) can cause breathing problems, trigger asthma, reduce lung function and cause lung diseases.

The symptoms of bronchitis in asthmatic children increase in association with long-term exposure to NO<sub>2</sub>

### ➤ NH<sub>3</sub> – Ammonia

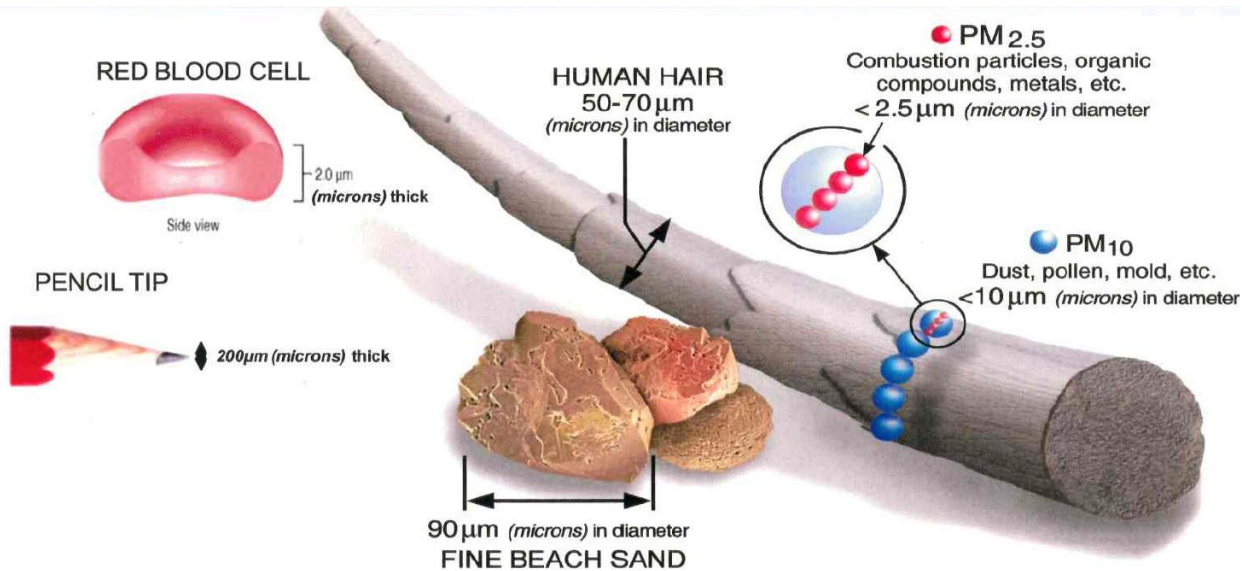
NH<sub>3</sub> contributes to acid deposition and eutrophication, which in turn, can lead to potential changes occurring in soil and water quality.

As a secondary particulate precursor, NH<sub>3</sub> also contributes to the formation of particulate aerosols in the atmosphere. Particulate matter is an important air pollutant due to its adverse impact on human health and NH<sub>3</sub> is therefore also indirectly linked to effects on human health

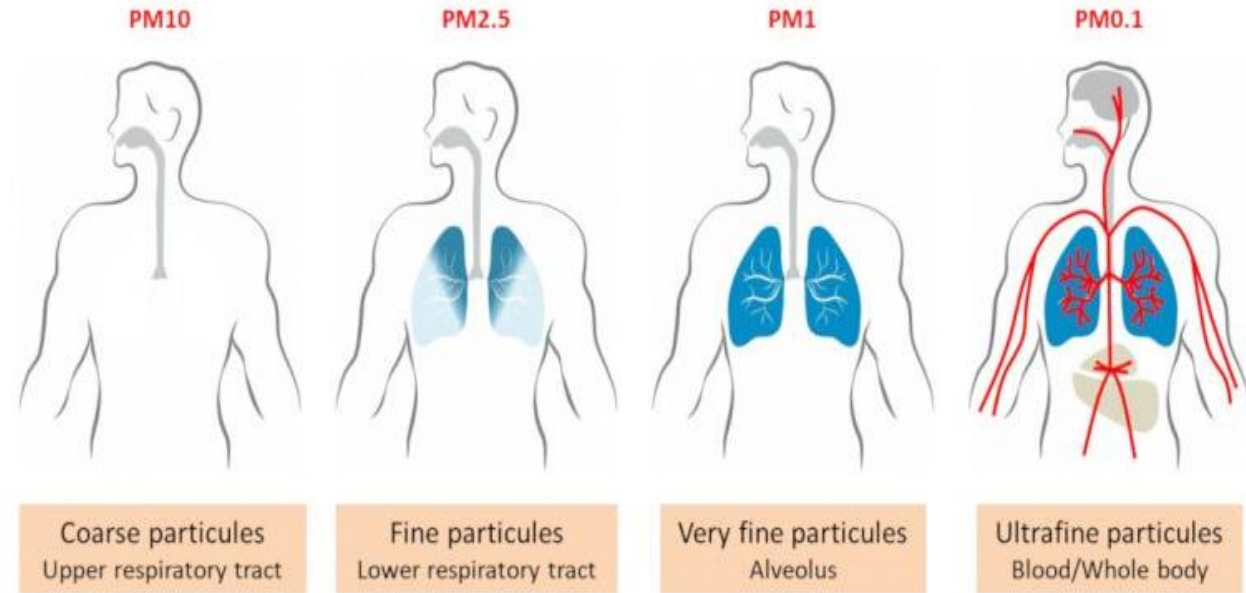
# Methodological approach for the preparation of the programme

## Air pollutants and health impacts

### ➤ PM<sub>10</sub> and PM<sub>2.5</sub>



Source: [www.willrich.com](http://www.willrich.com)



Source: <https://molekule.science.com>

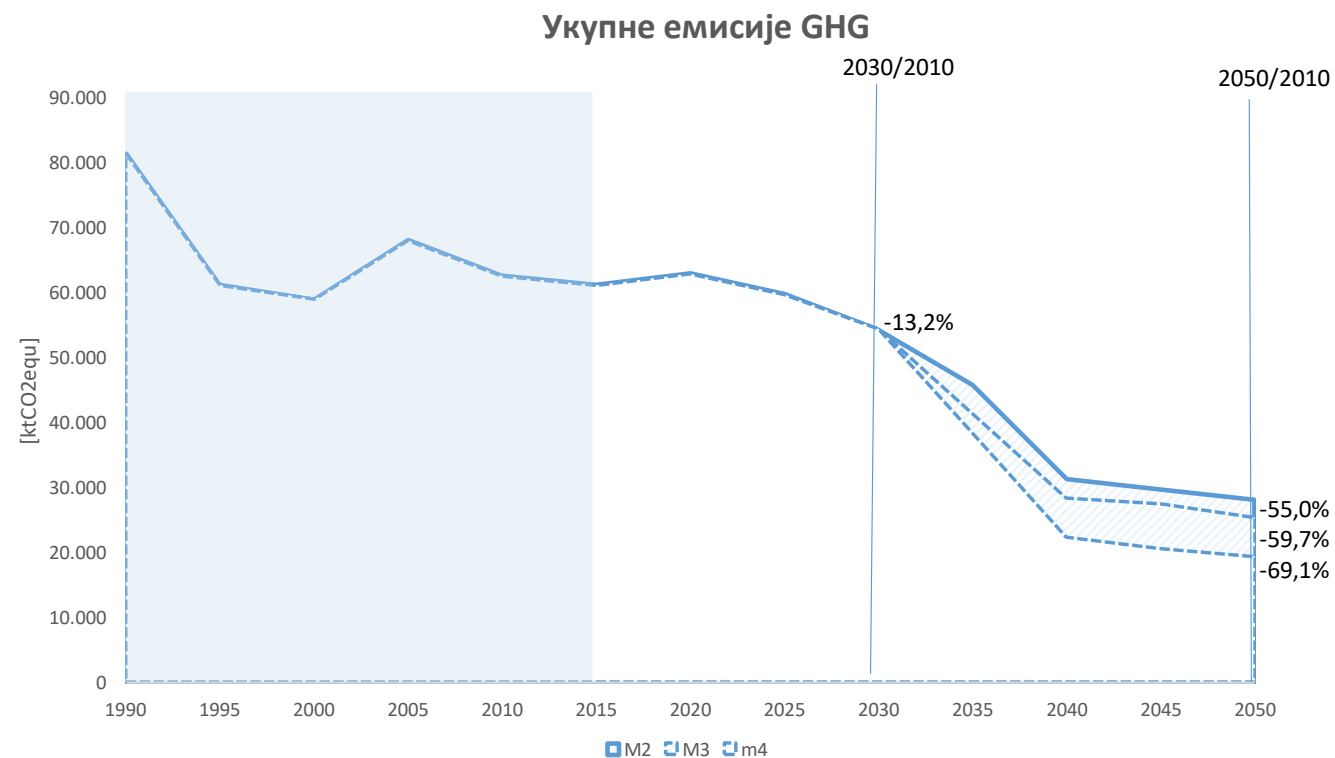
A 2013 assessment by WHO's International Agency for Research on Cancer (IARC) concluded that outdoor air pollution is carcinogenic to humans, with the particulate matter component of air pollution most closely associated with increased cancer incidence, especially lung cancer.

PM<sub>2.5</sub> can also influence diverse diseases, such as respiratory diseases, cardiovascular diseases, coronary heart diseases, metabolic diseases, dementia, and female reproductive disorders, and unhealthy birth outcomes.

# Methodological approach for the preparation of the programme

## ACTIVITY DATA

In order to ensure consistency between climate change and air quality policies and measure, the evolution of the activity data for the period 2020-2035 was taken from M2 climate scenario from the draft Climate change Strategy of the Republic of Serbia (public consultation ended 24.01.2020)

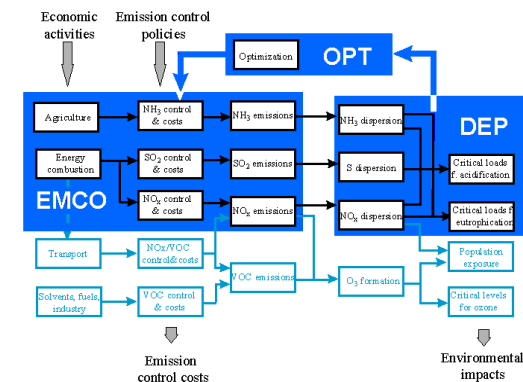


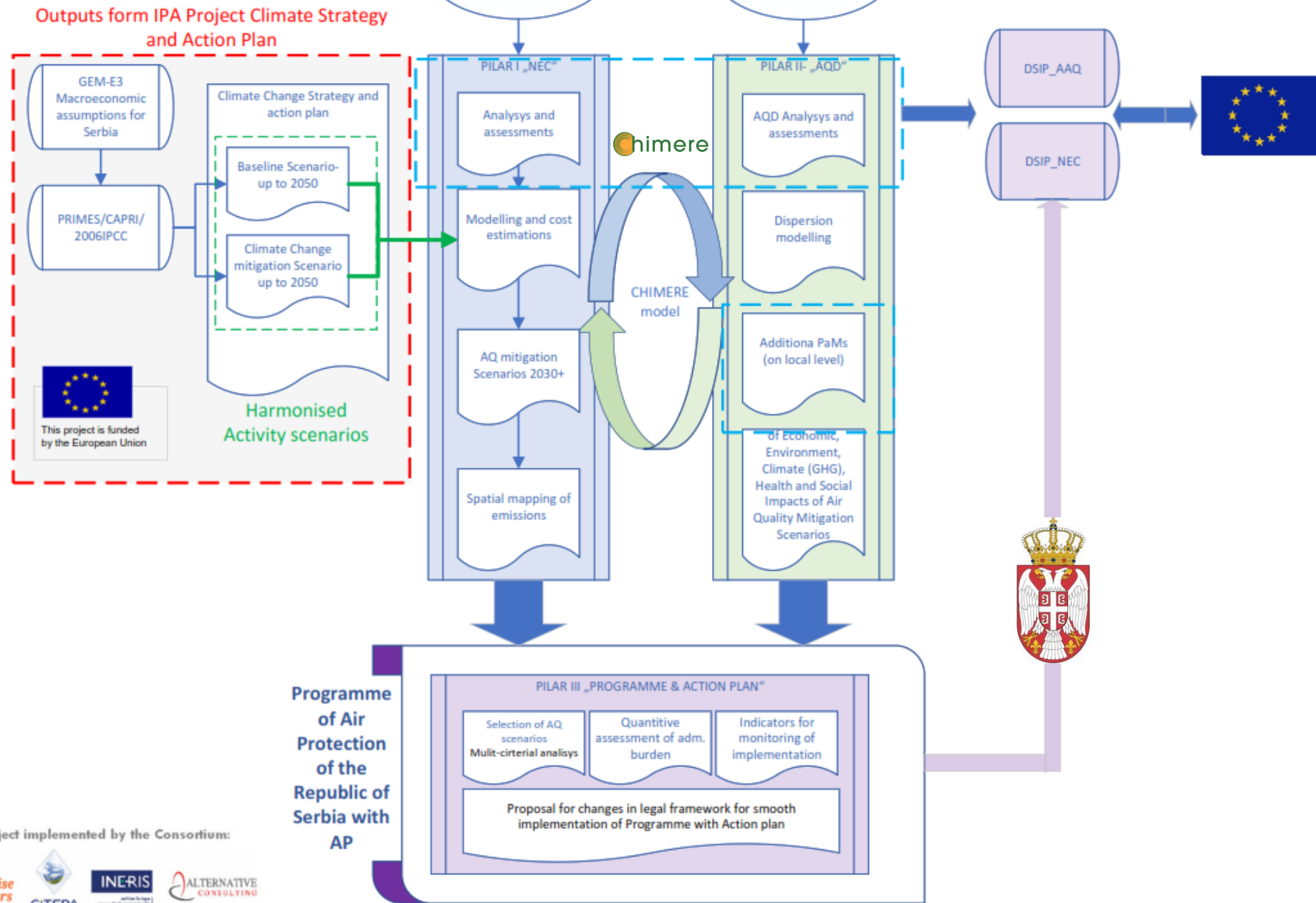
# Methodological approach for the preparation of the Programme

## MODELLING TOOLS USED

- For the projection of the air quality pollutant by 2030 and beyond we used modified/upgraded RAINS model (base year 2015)
- For the dispersion modeling we used CHIMERE multi-scale chemistry-transport model for atmospheric composition analysis and forecast which allows to translate future reduced emissions of air pollutants from different sectors and sources into the expected future ambient air quality.
- For the assessment of health impacts we are using Alpha-RiskPoll (ARP) model (emission reductions are translated into decreased life expectancy and in years of life lost (YLL) The version of the model used by technical team of experts has been recently used in the preparation of the Second Clean Air Outlook published by the European commission in January 2021.

The RAINS Model of Acidification and Tropospheric Ozone





# Activities conducted so far and technical documentation prepared - to support the Programme

| PILAR I                                                                                                                                                                                                                                             |  |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Activity 3.1: Analysis of current policy framework related air quality pollutant emissions                                                                                                                                                          |  |
| Activity 3.2: Assessment of current CLRTAP inventories of SO <sub>2</sub> , NO <sub>x</sub> , VOC and NH <sub>3</sub> , PM <sub>10</sub> and PM <sub>2.5</sub> , heavy metals Pb, Hg and Cd, POPs and other pollutants for the timeseries 1990-2018 |  |
| Activity 3.3: Air pollutants baseline scenarios for 2020, 2025, 2030 and beyond up to 2050                                                                                                                                                          |  |
| Activity 3.4: Air pollutants mitigation scenarios for 2020, 2025, 2030 and beyond up to 2050                                                                                                                                                        |  |
| Activity 3.5: Financial implications and Cost estimation and timeframe for implementation of policies and measures included in scenarios                                                                                                            |  |
| Activity 3.6: Spatial mapping of emissions                                                                                                                                                                                                          |  |

# Activities conducted so far and technical documentation prepared - to support the Programme

| PILAR II                                                                                                                                                                                                            |  |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Activity 3.8: Assessment of the current Serbian air and ozone layer protection legal and policy framework, including recommendations for improving policies in relation to observe inconsistencies and inadequacies |  |
| Activity 3.9: Assessment of the compliance of current Serbian network with EU requirements for AQ monitoring                                                                                                        |  |
| Activity 3.10: Assessment of the current state of air quality                                                                                                                                                       |  |
| Activity 3.11: Assessment of the level of compliance of currently adopted air quality plans                                                                                                                         |  |
| Activity 3.12: Dispersion modelling of mitigation scenarios effects proposed under Pillar I                                                                                                                         |  |
| Activity 3.13: Assessment of the optional additional policies and measures in zones and agglomerations (local measures) aiming to achieve appropriate air quality and emissions standards                           |  |
| Activity 3.14: Assessment of the Economic, Environment, Climate (GHG), Health and Social Impacts of Air Quality Mitigation Scenarios                                                                                |  |
| Activity 3.15: Quantitative assessment of the administrative burden                                                                                                                                                 |  |

# Activities conducted so far and technical documentation prepared - to support the Programme

| PILAR III                                                                                                                                                                                                         |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Activity 3.16: Identification of the preferred mitigation scenarios taking into account results of Pilar I and Pilar II (multicriteria analysis)                                                                  |  |
| Activity 3.17 Proposal for additional policies and measures in aiming to achieve appropriate air quality in zones and agglomeration to be considered by the local communities (WAM-C)                             |  |
| Activity 3.18 Preparation of the Programme document                                                                                                                                                               |  |
| Activity 3.19 Preparation of Action Plan for effective implementation of the Programme                                                                                                                            |  |
| Activity 3.20 Proposal for changes needed in Serbia's legal framework in order for Strategy and action plan to be effectively conducted and smoothly implemented and implementation to be monitored and evaluated |  |
| Activity 3.21 Organisation of 3 events in the course of the strategy preparation                                                                                                                                  |  |
| Activity 3. 22 Organisation of a final public event                                                                                                                                                               |  |

# Proposed content and structure of the Programme

1. Introduction
  2. Background policy framework
  3. Current situation regarding Air quality in Serbia
  4. Baseline scenario for years 2020-2030 and beyond
  5. Vision
  6. Air quality mitigation scenarios
  7. Costs and Health & environmental impacts of mitigation scenarios
  8. General Objective and specific objective
  9. Measures and their Environmental impacts
  10. Framework for monitoring and reporting the policies and measures
  11. Action plan
- Appendixes

Note: Structure is aligned with requirements of the Law on Planning System of the Republic of Serbia

# Next Steps and timing

- Defining WAM-C scenario / inputs from the stakeholders – **April/May 2021**
- Assessment of the costs and benefits, health impacts for all 3 mitigation scenarios (WAM-A, WAM-B, WAM-C) – **May 2021**
- Multicriterial analysis – selection of the appropriate mitigation scenario – **May/June 2021**
- Public event – **May/June 2021**
- Preparation of the draft Programme with Action Plan – **June/July 2021**
- Public event – **July 2021**

## Questions and assistance

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Thank you for your attention!