



Legislation and Air quality Monitoring in Republic of Macedonia

Study tour, Vienna
26 - 29.02.2007

EU destination

EU Membership processes in Republic of Macedonia

- Activities in approximation the EU legislation in R. Macedonia concerning the environment
- Preparation of Action plan for European partnership
- Preparation of National Programme for adoption of the European Union Law

International obligations

Ratified conventions

- Convention Long Range Transboundary Air Pollution
 - EMEP Protocol (Cooperative Programme for Monitoring of Air Pollutants in Europe) is in ratification phase by succession
 - The remaining Convention protocols are in initial ratification process phase
- Frame Convention for Climate Change
 - Kyoto Protocol
- Convention for Ozone Layer Protection
 - Montreal Protocol
- Stockholm Convention for Persistent Organic Pollutants (POPs)

Legislation for air

- Harmonization of the legislation concerning the environment and air with the EU legislation
- Law on environment
- Law on Ambient Air Quality, harmonized with Framework Directive 96/62/EEC
- Secondary legislation
 - Decree on limit values of ambient air quality and alert thresholds transposing Directives 96/62/EC, 99/30/EC, 2000/69/EC, 2002/3/EC,
 - Rulebook on ambient air quality assessment, transposing Directives 96/62/EC, 99/30/EC, 2000/69/EC, 2002/3/EC, 97/101/EC

Secondary legislation in preparation phase

- Within CARDS 2004 Programme, preparation of secondary legislation is planned concerning:
 - Regulation of air emissions from stationary sources
 - Rulebook for preliminary assessment and establishment of zones and agglomerations
 - Rulebook for establishment of the CORINAIR methodology as national methodology for pollutant inventory preparation

Regarding the preparation of the secondary legislation included in the CARDS 2004 Programme activities, transposition of the Directives 99/13/EC, 96/61/EC, 2001/80/EC, 2001/81/EC, 94/67/EC etc. will be done.

Remaining preparation acts

- Secondary legislation that has to be prepared in the following period:
 - Rulebook for monitoring and reporting
 - Rulebook for emissions from mobile sources
 - Rulebook for fuel control
 - Preparation of National Plan for protection of the ambient air
 - Programme for decreasing the pollution and improving the ambient air quality
 - Changes and amendments in the Law on Air Quality, the Decree for limit values and the Rulebook for Air Quality Assessment.

Monitoring of Air Quality

- Air quality monitoring goals
 - Systematic follow up, observation, detection and assessment of the pollution impact to the ambient air quality;
 - Identification and allocation of the pollution sources;
 - Assessment of the impact of the polluted ambient air to the human health and the environment;
 - Determination and proposal of measures for improving the ambient air quality and
 - Utilization of other techniques for ambient air quality, especially the modeling and the identification of future problems.

Institutions performing air quality monitoring in the Republic of Macedonia

- Public Health Institutes
- Hydro meteorological Administration
- Ministry of environment and physical planning

Public Health Institutes

Public Health Institute – Skopje

- SO₂ is measured at 4 measuring points
- Black smoke is measured at 7 measuring points
- Aero sediment is measured at 30 locations with the measuring time of one month, but with calculations for 24 hours
- CO is measured at 4 locations (crossroads) with measurement period 2x7 days during spring and autumn
- Lead is measured at one location (near institute) with measurements of 2 times per year for seven days (spring and autumn)

Public Health Institute – Veles

- SO₂ is measured at 3 measuring points
- Black smoke is measured at 3 measuring points
- Aerosediment is measured at 7 measuring points in the City

Hydrometeorological administration

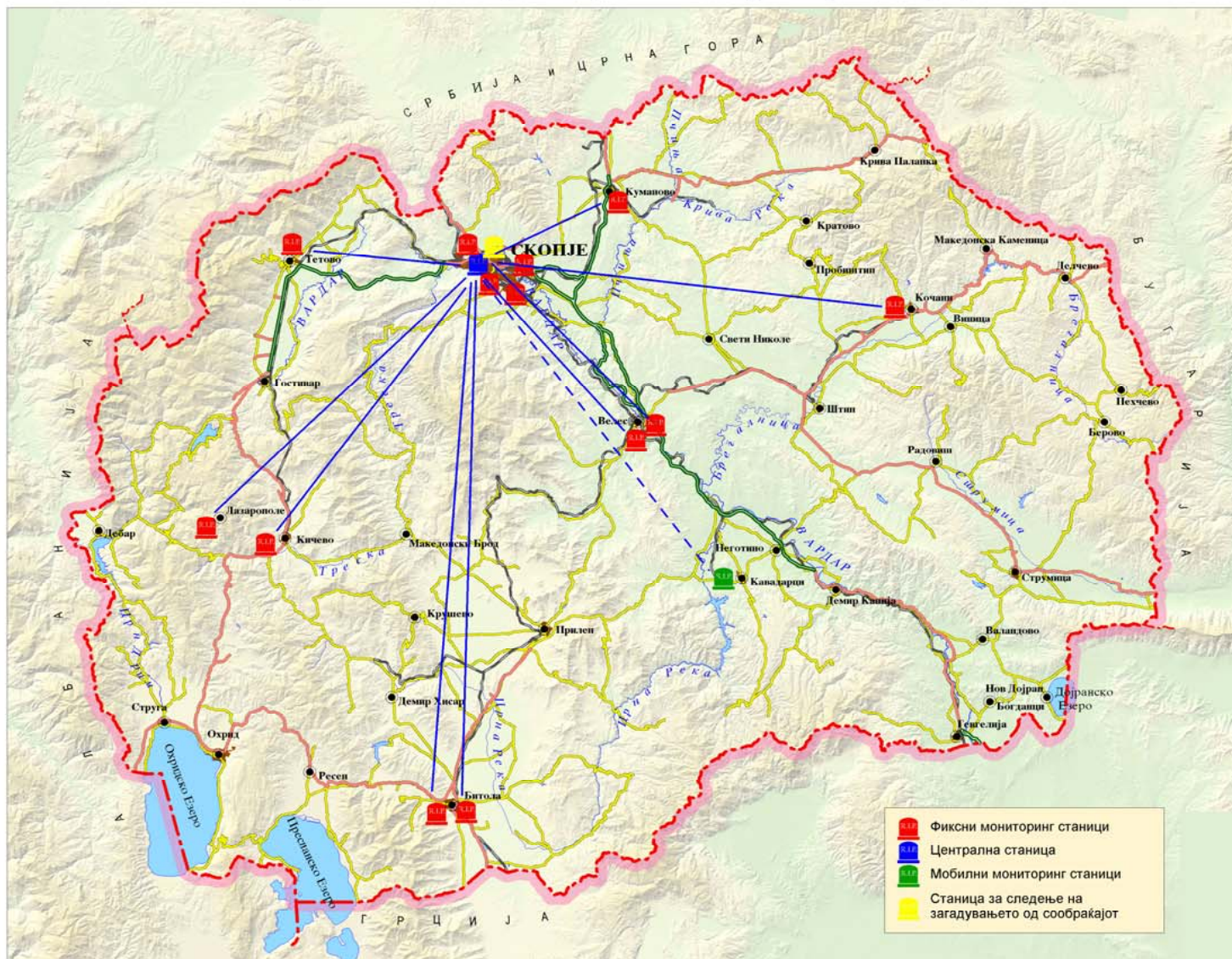
- SO₂ and black smoke are measured at 9 measuring points in **Skopje** and in 10 other cities in the country: **Berovo, Bitola, Tetovo, Gevgelija, Kumanovo, Ohrid, Prilep, Stip, Veles and Lazaropole.**
- NO₂ and O₃ are measured at 2 measuring points: Karpos IV and Lazaropole (EMEP station)

Ministry of Environment and Physical Planning

At present, the Ministry of Environment and Physical Planning has:

- 13 fix automatic air quality monitoring stations
- one mobile station
- one traffic air pollution monitoring station

Распоред на автоматските мониторинг станици за квалитет на воздух во Република Македонија



State automatic air quality monitoring system

Automatic air quality monitoring stations measure environmental and meteorological parameters.

Measured **environmental parameters** include:

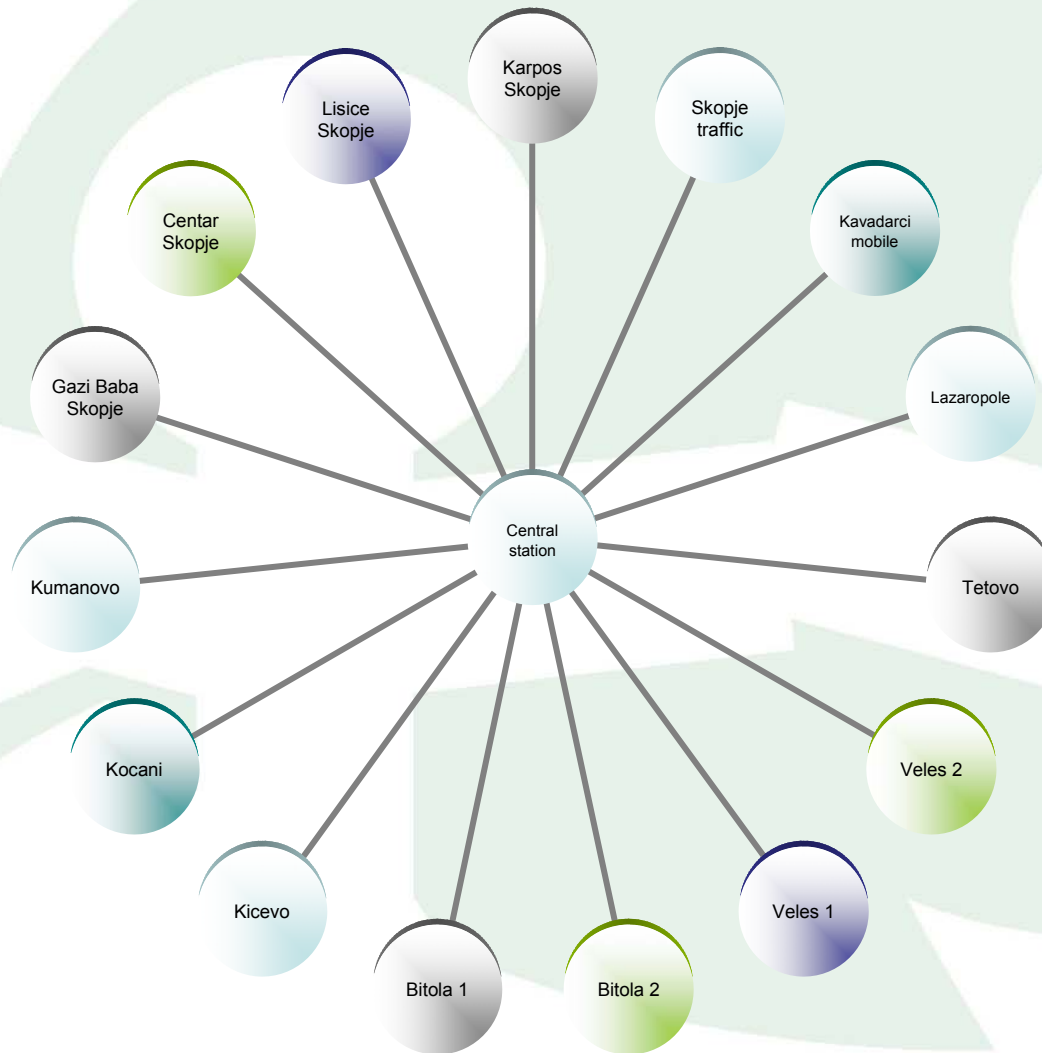
- CO carbon monoxide
- SO₂ sulphur dioxide
- Nitrogen oxides
- O₃ ozone
- PM₁₀ suspended particulate matters in air with size below 10 microns

State automatic air quality monitoring system

Measured **Meteorological parameters** include:

- Wind velocity, expressed in m/s
- Wind direction, expressed in degrees
- temperature, expressed in Celsius degrees
- humidity, expressed in %
- pressure, expressed in hPa
- global radiation, expressed in W/m^2

State automatic air quality monitoring system



- DAS (Data Acquisition system) software in each monitoring station
- Telephone line
- CAS (Central Acquisition system) software in central station



Знаеш ли 
колку си зелен?

Calibration Laboratory

- Established in May 2004



Calibration Laboratory



Low volume samplers

- 6 LVS PM10 (low volume samplers) were installed in April 2005



High volume samplers

- 4 HVS PM10 (high volume samplers) were installed in April 2005



Monitoring of Heavy metals

- Public health institutes in Skopje perform monitoring of Pb and Cd twice per year, one week in April and one week in October
- Incidental measurements and analysis of the context of particles (PHIs and HMA)
- Preliminary measurements of following 12 heavy metals: Cd; As; Hg; Ni; Pb; Mn; Cr; Fe; Zn; Mg; Cu; in air in 2006 from PM10 from the samplers (MEPP)
- Current situation-Suitable balance room, not yet validated method for analysis of HM
- Future plans-Establishment of HM monitoring

Data processing and information

- Daily information about air quality in R. Macedonia
- City Centre for Information and Warning
- Monthly report from the State Automatic Air Quality Monitoring System
- Annual report of all processed air quality data
- Development of popular brochures on air topics
- European Environmental Agency EEA