Data Technologies For Air Quality Management In Turkey

**UNESCAP**
Regional Cooperation for Air Pollution in Asia and The Pacific

*Using Data and Technology to Mitigate Air Pollution*
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Content

- Legislative Action for AQ Management
- International Linkage
- AP Mitigation Activities
- Data Technologies in Türkiye for AQ Management
UNITED NATIONS ECONOMIC COMMISSION FOR EUROPE (UN Economic Commission for Europe, UNECE) (Convention on Long Range Transboundary Air Pollution – CLRTAP) and EMEP Protocol

Preparation and Reporting of inventory and Informative Inventory Report-IIR on National Air Pollutants

Attendance at the meetings of Executive Body and Task Forces

7th September International Clean Air Day CITYAIR Project

INTERNATIONAL COOPERATION
Disseminated within whole country

National Air Quality Monitoring Network in 81 provinces

Online available

Measurement results are online at http://sim.csb.gov.tr/ website.
- 360 active monitoring stations

Measurement content
- All of these stations are equipped to measure $SO_2$ and $PM_{10}$,
- $CO$, $NOx$, $O_3$, $PM_{2.5}$ and meteorological parameters.
- 160 stations for $PM_{2.5}$
**LEGISLATION ON AIR MANAGEMENT**

Institutional Acts;
Presidential Decree No.1
Environmental Law No.2872

By-law on Air Quality Assessment and Management

By-law on Environmental Noise Management

EMISSIONS

FIXED SOURCES

POINT SOURCES
- By-law on Control of Industrial Emissions

DIFFUSE SOURCES
- By-law on Control of Residential Heating Emissions

LINEAR SOURCES

Fuel Quality
- By-law on Gasoline and Diesel Quality
- By-law on reducing the sulphur content in some fuel types

Control studies on Volatile Emissions
National Action Plan and Roadmap Preparation
National Action Plan and Roadmap Preparation
BETTER AIR QUALITY

- Limit values for main pollutants aligned with EU standards
- Local Clean Air Action Plans (64 cities out of 81)
- Presidential Action Plan; ‘constructing 3000 km bicycle path’, ‘Walking Path and Environmental Street Planning’
- Low Emission Zones are on the way
- Local measures for cities with air quality modeling, mapping, inventories

EMISSION INVENTORY & MONITORING

- Source-based control for air pollution; industrial, residential and transport together with legislative and electronic tools
- Online monitoring of air quality by 360 stations
- 8 Regional Clean Air Centers
- Reporting of National Air Emission Inventory since 2011

EMISSION REDUCTION STRATEGIES

- Presidential Action Plan; Noise Barriers-60,000 m²
- Exhaust Gas Electronic Monitoring System for vehicle emissions (EGEDES)
- Strategical Noise Maps; provinces, airports, roads
- Sustainable production and consumption; Best Available Techniques for industrial processes

MITIGATION STUDIES

- European Green Deal Action Plan
- Sectoral and Practise Guidance Documents prepared.
- Residential Transformation for AQ Implementation Projects
- Legislative tools for implementation
- Sustainable production and consumption; Best Available Techniques for industrial processes

DISSEMINATION OF CYCLING PATHS
Emissions from industrial facilities, emissions due to energy consumption in buildings, emissions from organised industrial zone, gas stations, waste storage, road transport emissions, aviation emissions and railway emissions are calculated.

Air emissions data from almost 15000 stacks from 5087 industrial facilities are recorded.

To reflect data on residential heating emissions, «Solid Fuel Module» is implemented. Since started 2815 users are identified and 13326 Licenses are recorded in total for the process of solid fuel sale.

Emissions are distributed on 1km*1km grids.

Strategic air quality mapping by running meteorological and air quality models.
STRATEGIC AIR QUALITY MAPPING

150 different air pollutants
3 different domain considering long range transportation of air pollutants,
Meteorological and air quality models are run on «4kmx4km» grids.
Servers and all necessary hardware needed to run models are provided by the Ministry.
3D DESKTOP SOFTWARE-NEFES
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- Urban Atlas
- Fuel type (coal, natural gas, ...)
- Road type (Highway, main road, Street, ...)
- Traffic (main joints, pedestrian zone, bump, traffic lights)
- Traffic coefficients (slope, density hot points)
DETERMINATION OF EMISSION SENSITIVITY AT UPHILL AND DOWNHILL
NEFES SOFTWARE

Roads
Buildings
Landuse
Total
Emissions
We are acting as a part of the solution with HEY Portal and 3D NEFES we developed.

Thank You For Your Attention
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