



COST

European Network on New Sensing Technologies for Air
Pollution Control and Environmental Sustainability - *EuNetAir*

COST Action TD1105

WGs and MC Meeting at Rome, 4-6 December 2012

Action Start date: 01/07/2012 - Action End date: 30/06/2016

Year: 2012-2013 (*Starting Action*)



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Function in the Action (MC, WG1 & 2, SIG II member,)

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Air Quality Monitoring in Turkey

- In Turkey, Ministry of Environment and Urbanization is the competent authority on this issue.
- Ministry has national air quality monitoring network contains 122 measurement stations in 81 cities of the country.
- Air quality parameters, which are particulate matter (PM10) and gaseous pollutants (CO, SO₂, NO, NO₂, NO_x, O₃), are measured and
- the measurement results are displayed on the Ministry's air quality monitoring network website, the results are hourly updated on this website:
<http://www.havaizleme.gov.tr>

Study Area is whole country

- Turkey is located in the temperate zone between the 36 and 42nd degrees of northern latitudes and 26 and 45th degrees of eastern longitudes.
- The estimated population of the country in 2011 is 74,724,269. Turkey is divided into seven geographical regions in terms of natural, demographic and economical aspects.
- These regions are
 - The East Anatolia Region (21% of the surface area),
 - The Central Anatolia Region (20% of the surface area),
 - The Black Sea Region (18% of the surface area),
 - The Mediterranean Region (15% of the surface area)
 - The Aegean Region (10% of the surface area),
 - The Marmara Region (8.5% of the surface area) and
 - The Southeast Anatolia Region (7.5% of the surface area).

Air Monitoring Stations



T.C. Çevre ve Şehircilik Bakanlığı
Tel: +90 312 410 10 00 - Faks: +90 312 498 21 66

<http://www.havaizleme.gov.tr>

Stations are equipped

- Automatic SO₂ analyser (UV Fluorescence)
- Automatic PM₁₀ analyser (Beta absorption)
- Software for data collection and reporting (Envidas for windows) and computer
- GSM Modem
- Air conditioner
- Calibrated SO₂
- Gravimetric PM₁₀ measurement system
- Meteorological sensors





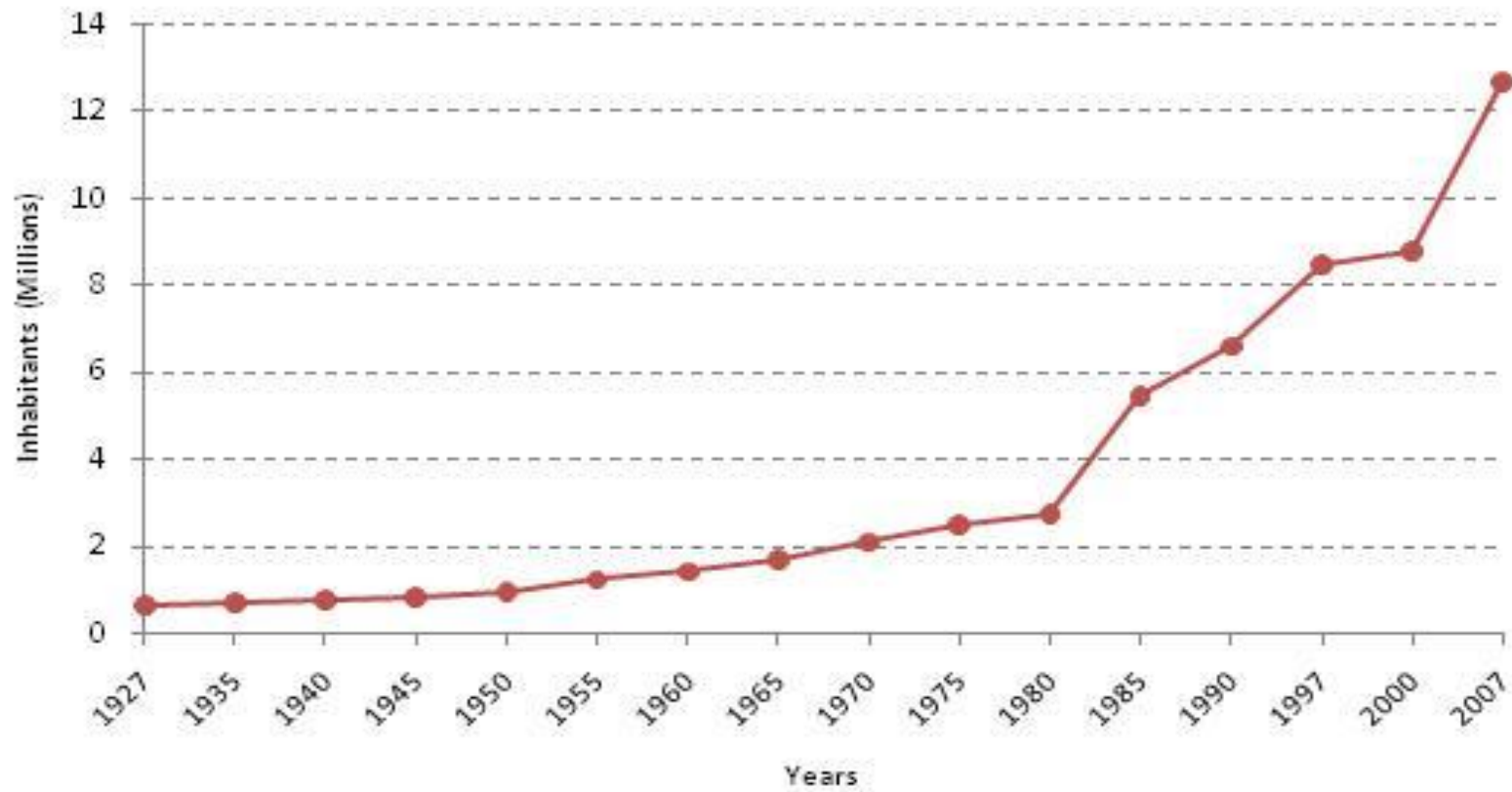
Case Study Istanbul

- **Newspaper headlines in 1990's**
- Common Death Risk in İstanbul
- Don't Let Your Kids Go Outside
- Air Pollution Level Going up Every Year.
- Living in İstanbul Decreases the Lifetime for 4 Years
- Air pollution has been monitored since 1995 in İstanbul. İstanbul
- Metropolitan Municipality (İMM) has 11 monitoring stations.
- It is possible to reach İstanbul's air quality data from the website
<http://www.ibb.gov.tr>

Pollution Prevention

- **Within the policies of Ministry; foremost Environmental Law and all legislation and its implementations cover the European Union's priorities included in the environmental policies of EU.**
- **The priorities are;**
 - **“Pollution Prevention” conceptual ranking,**
 - **Pollution Prevention at source**
 - **Waste minimization,**
 - **Best Available Technologies and Techniques,**
 - **Energy Efficient Usage,**
 - **Effective Monitoring and Auditing System Implementation,**
 - **“Polluter Pays” principal**

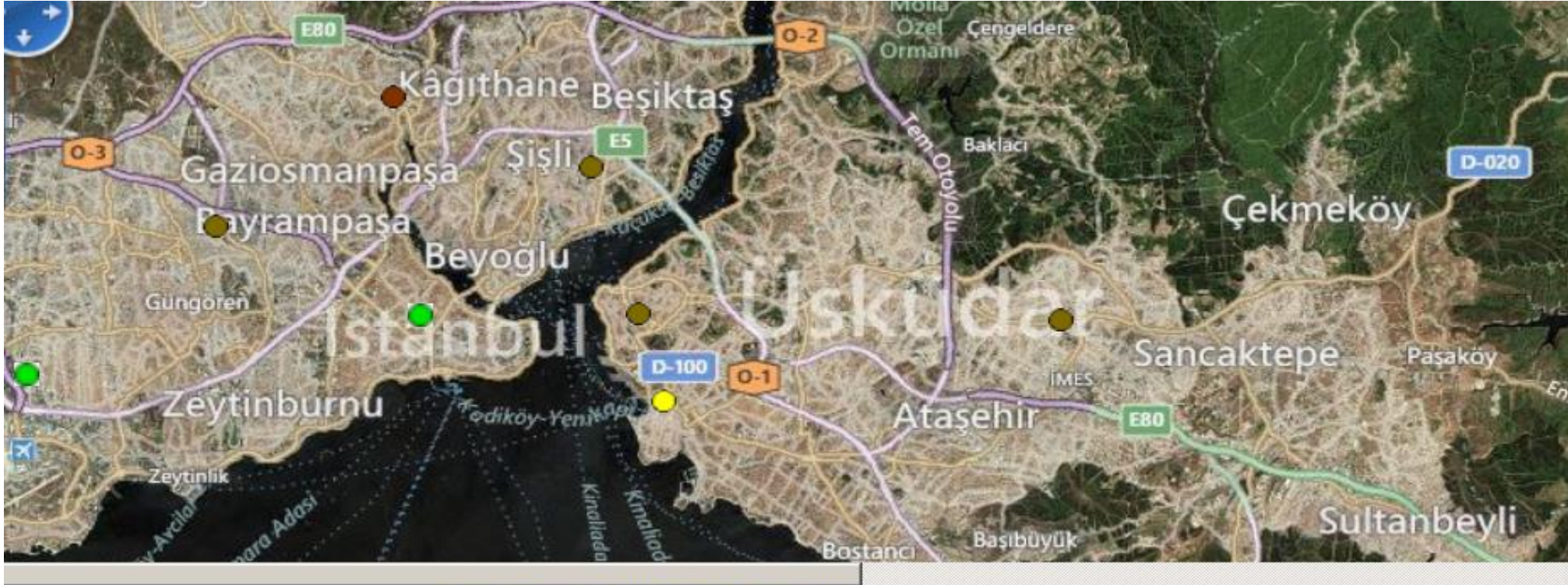
Population



Air quality monitoring stations in İstanbul



AQM Stations in Istanbul



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Air Pollution Sources

- Industrial plants,



- Motor Vehicles

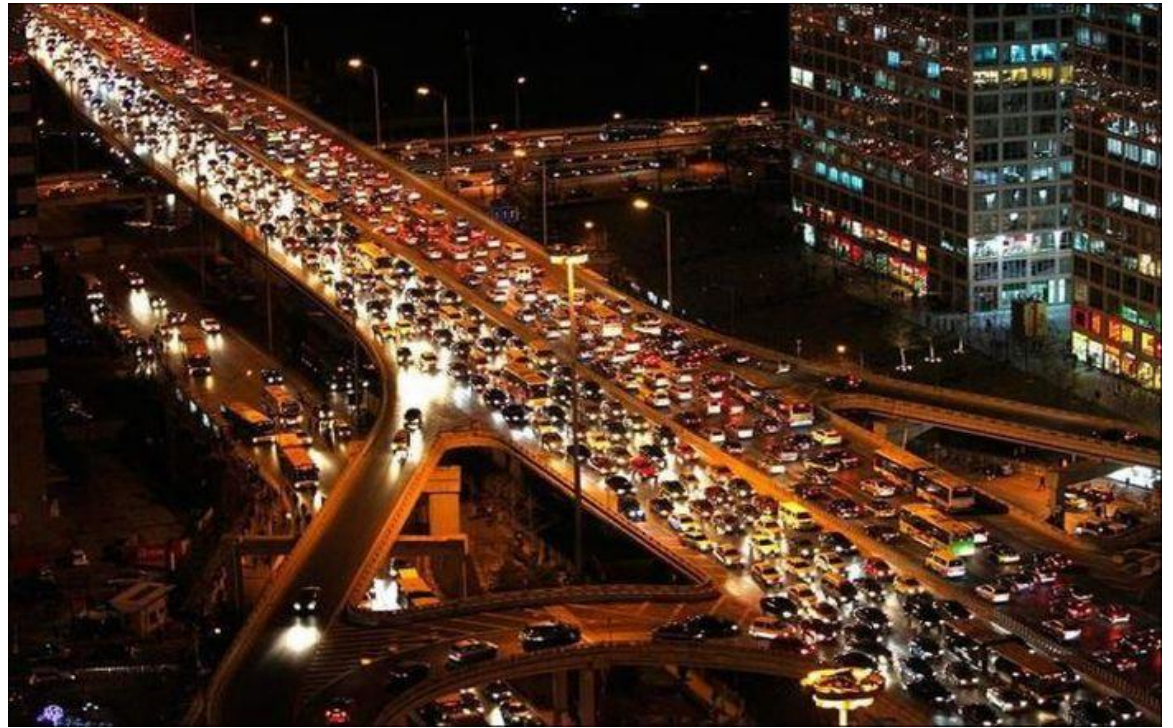


- Residential Heating

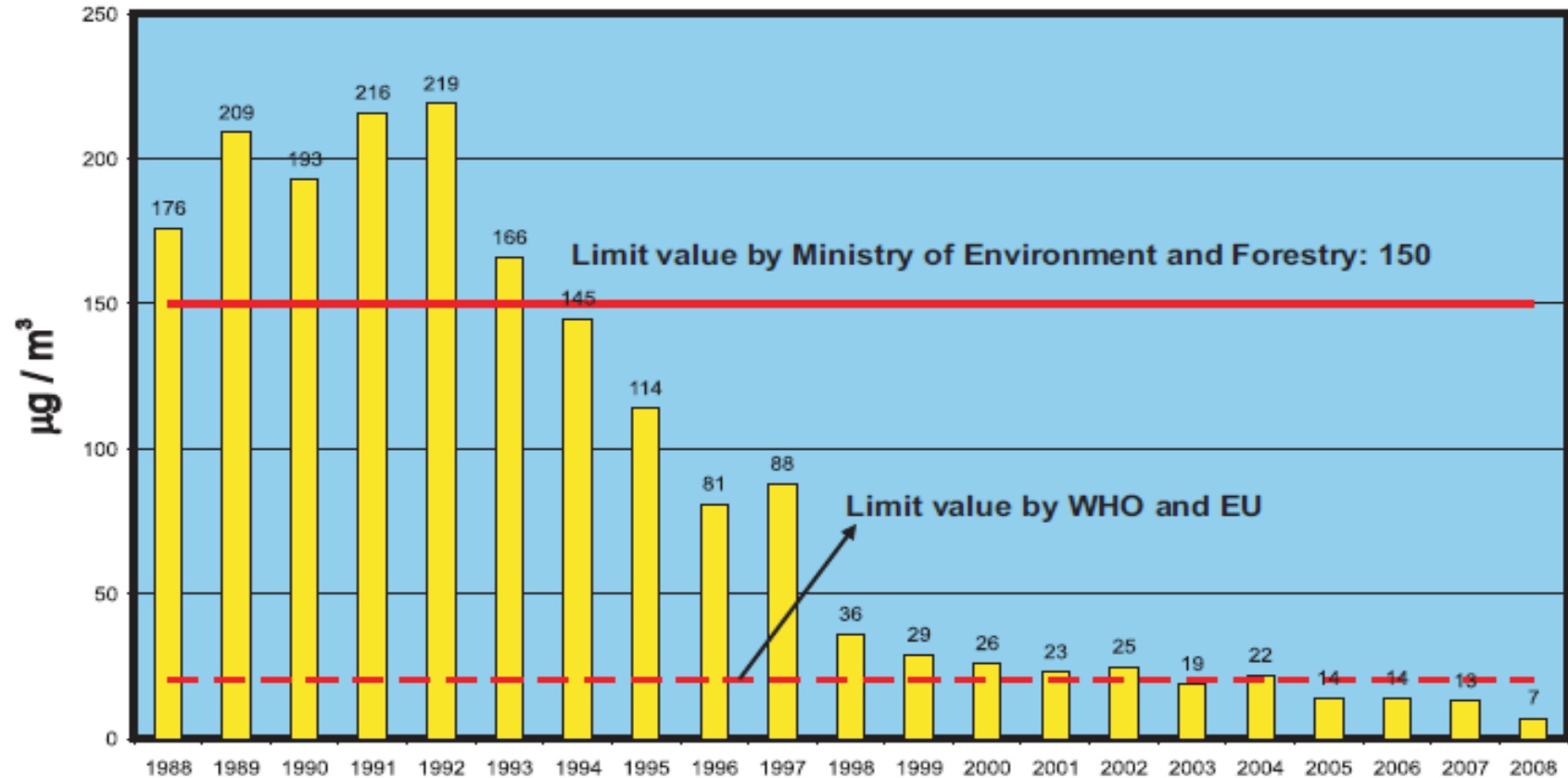


- Others.





SO2 values in İstanbul between the years 1988-2008



Sulfur dioxide values in İstanbul between the years 1988-2008

Pollution Reduction

Vehicle Emission Reduction

- Raising awareness about the environmentally friendly driving techniques.
- Improving the substantial transportation infrastructure.

Industrial Emission Reduction

- Industrial site selection considering wind direction
- Promoting new technologies in industries.

Household Emission Reduction

- Encouraging the use of natural gas in all parts of İstanbul

- Promoting thermal insulation in residential buildings
- Raising awareness about periodic stack cleaning and efficient combustion

Other initiatives

- Raising public's awareness about air quality
- Increasing green areas.
- Using the advanced decision support systems for urban and transport planning.
- Development of air monitoring network with the new analysers and parameters.

- İstanbul Metropolitan Municipality
Environmental Protection and Control Department
www.ibb.gov.tr/airqualistanbul

http://www.havaizleme.gov.tr

Ulusal Hava Kalitesi İzleme Ağı - Windows Internet Explorer

http://www.havaizleme.gov.tr/Default.ltr.aspx

Dosya Düzen Görünüm Sık Kullanılanlar Araçlar Yardım

Web Slice Galerisi

T.C. ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI
HAVA KALİTESİ İZLEME İSTASYONLARI WEB SİTESİ

ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI

GIS

Resolution 1600 * 1024

2D 3D Road Aerial Bird's eye Labels

İSTANBUL(KARTAL)

Last Recived:
28/11/2012 20:00

SO₂ - 21 µg/m³
PM10 - 307 µg/m³

Index Value:
Kötü
N/A

Owner:
İSTANBUL BÜYÜKŞEHİR BELEDİYESİ

[ClickStationInfo](#) [ClickOnlineView](#)

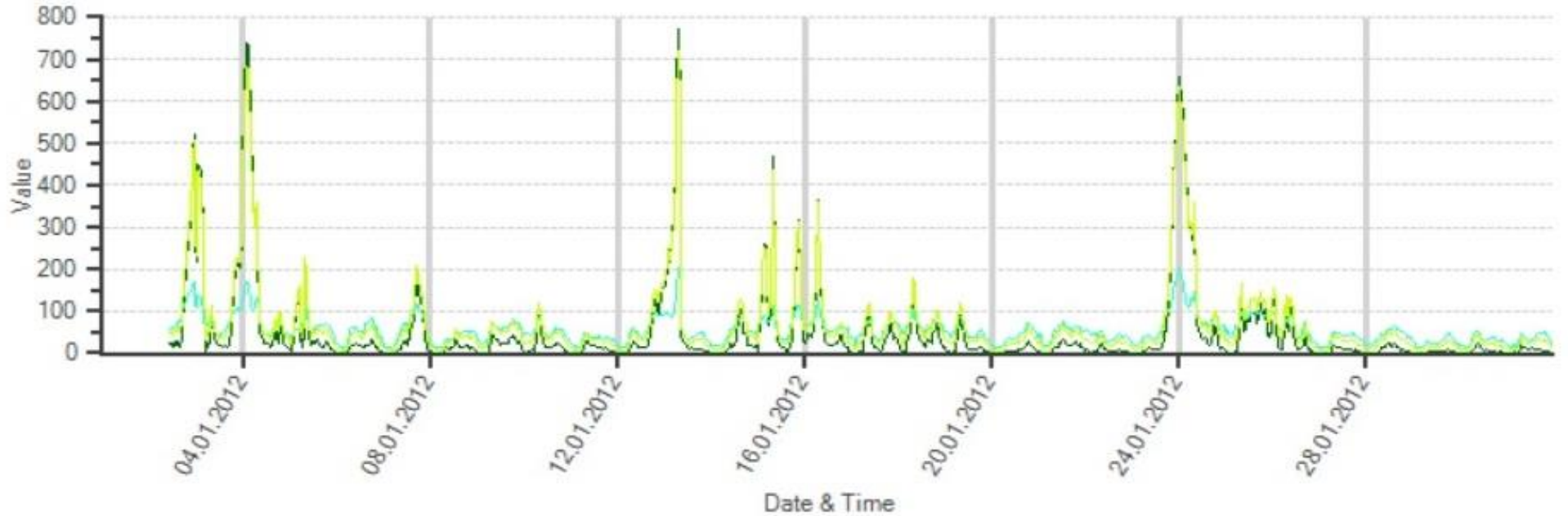
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Microsoft PowerPoint - [Sunu 1]

Başlat

TR 21:08 28.11.2012

Station: ISTANBUL(KADIKOY) Periodic: 01/01/2012 00:00 - 31/01/2012 23:00 Report Type: AVG

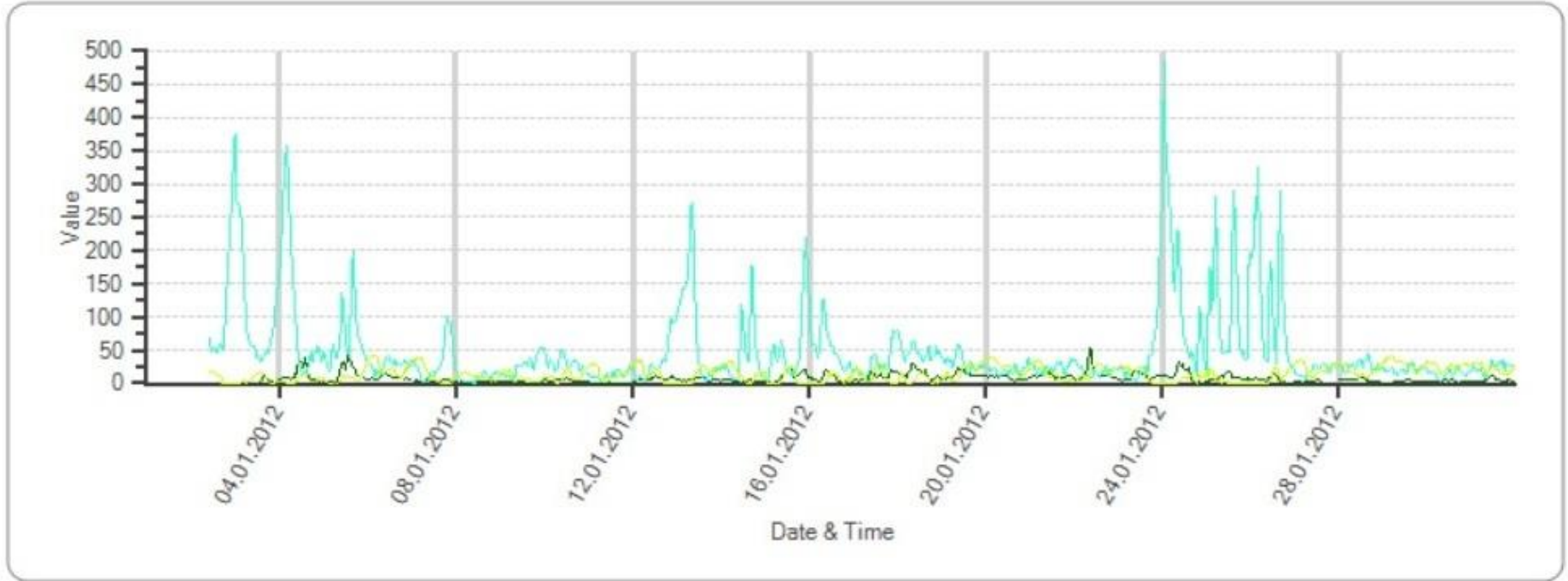


— NO [$\mu\text{g}/\text{m}^3$] — NO2 [$\mu\text{g}/\text{m}^3$] — NOX [$\mu\text{g}/\text{m}^3$]

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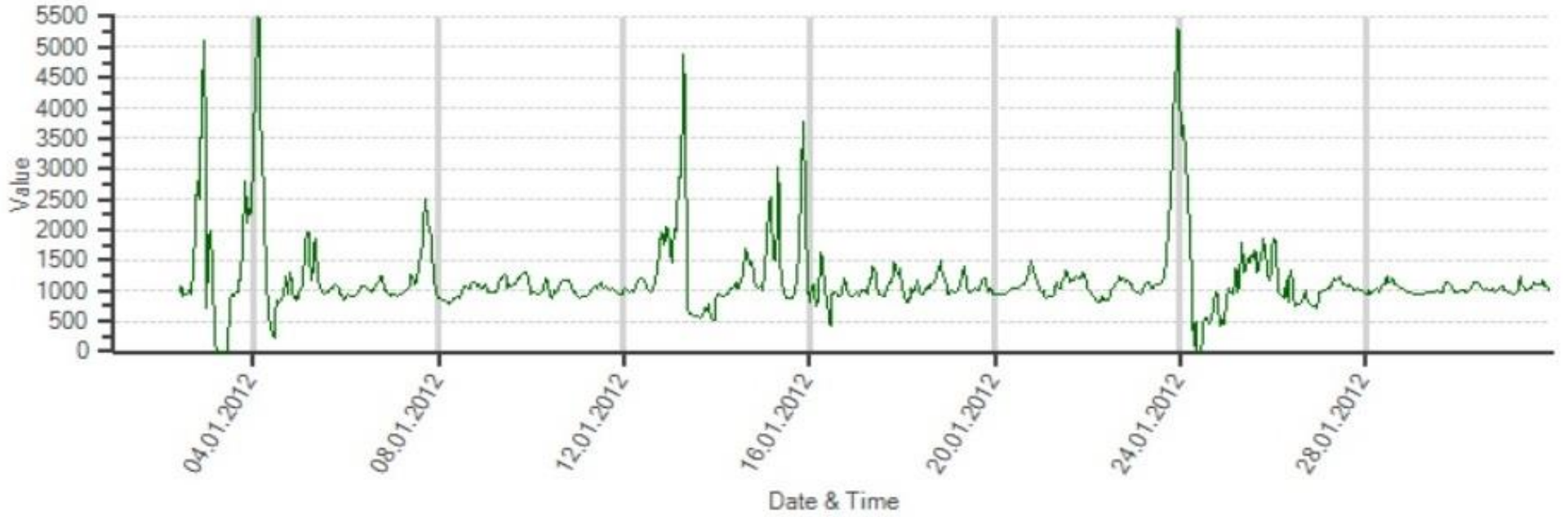


— SO2 [$\mu\text{g}/\text{m}^3$] — PM10 [$\mu\text{g}/\text{m}^3$] — O3 [$\mu\text{g}/\text{m}^3$]

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— CO[µg/m³]

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Suggested Priorities for future research

- gas sensors based on doped/undoped nanostructured metal-oxide semiconductors will be developed for toxic gases such as H₂, CO, and NO₂.
- to fabricate inexpensive, sensitive and selective gas sensors for toxic gases in the car cabin from low level to high level concentrations with low power consumption,
- to develop inexpensive sensor system applicable in AQM stations using fabricated sensors

Acknowledgement

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- COST Action TD1105 EuNetAir
- Organizing Committee