

Residential wood burning and the smart cities approach in mitigating its impacts

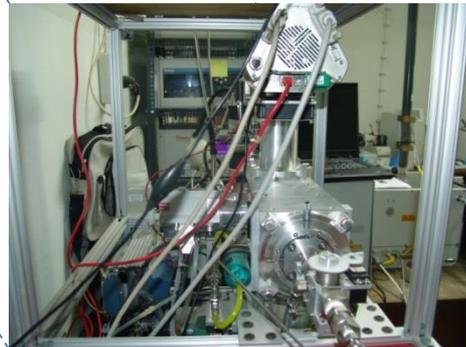
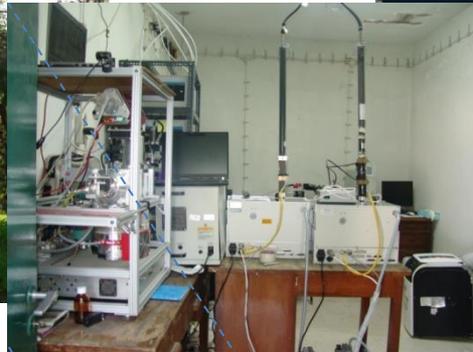
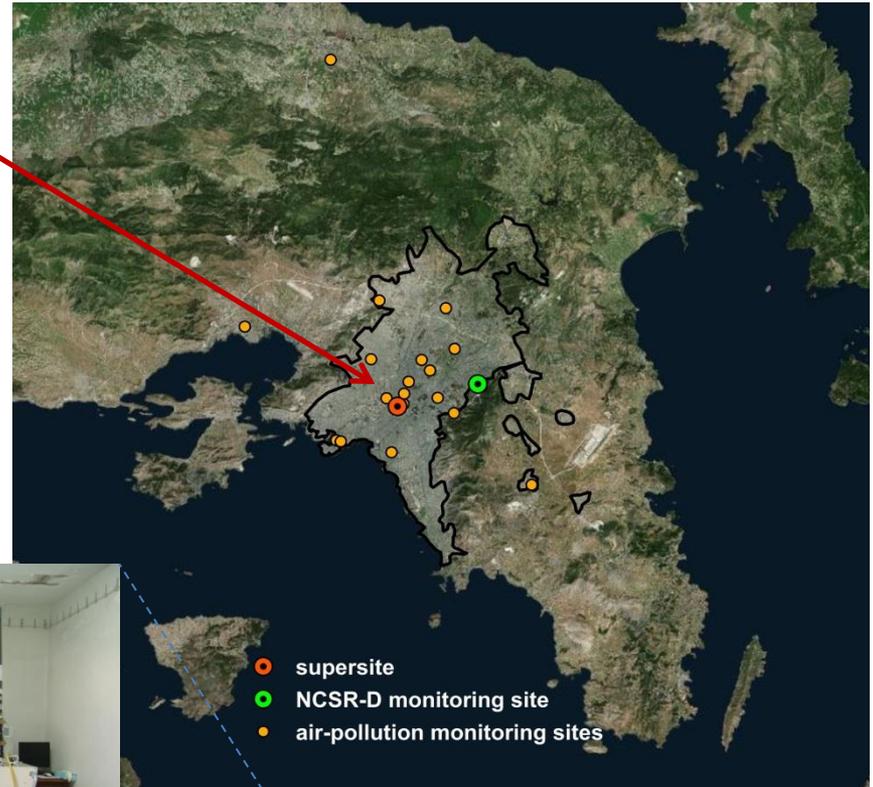
Dr. Evangelos Gerasopoulos, Dr. Eleni Athanasopoulou

Institute for Environmental Research and
Sustainable Development (IERSD) -
National Observatory of Athens (NOA), Greece



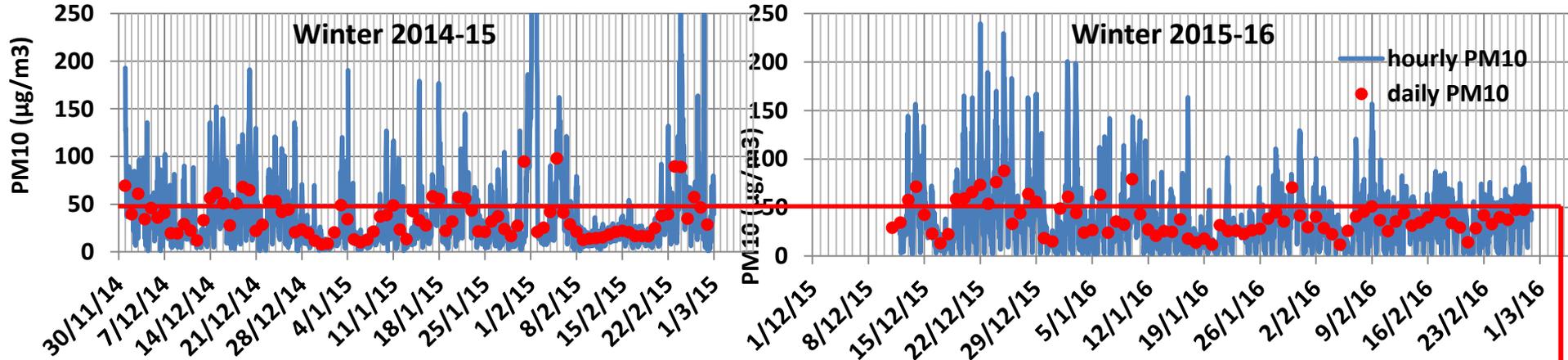
Athens Super-site

for the surveillance of
Atmospheric composition
2008 – now, NOA premises, Thissio



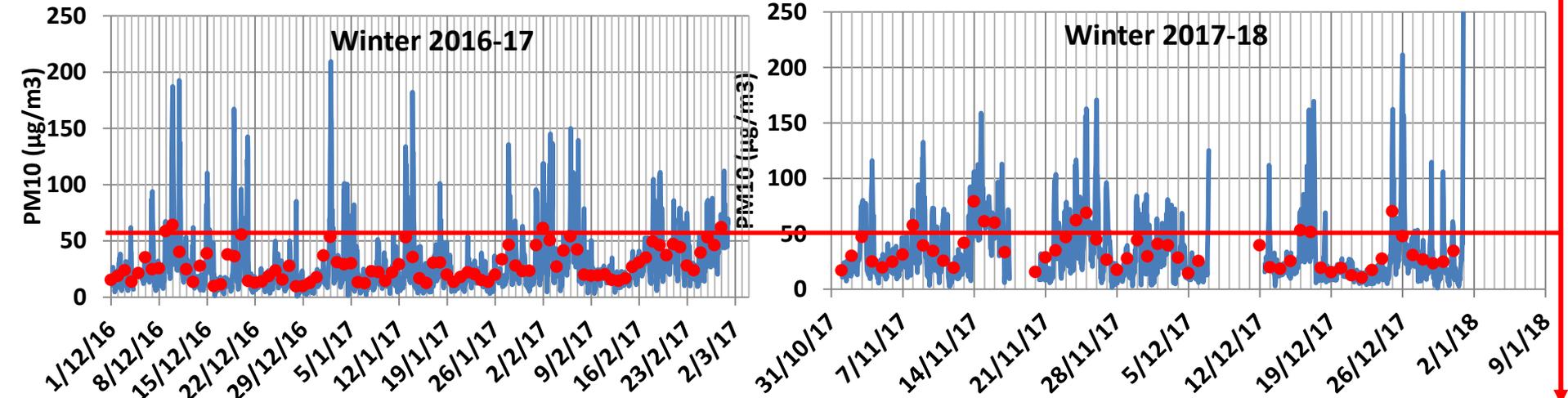
- ❖ *Gaseous and Particulate pollution*
- ❖ *Continuous measurements – chemical analyses*

Exceedances



- 40 nighttime peaks
- 20 days exceeding the PM₁₀ EU threshold

- 28 nighttime peaks
- 16 days exceeding the PM₁₀ EU threshold

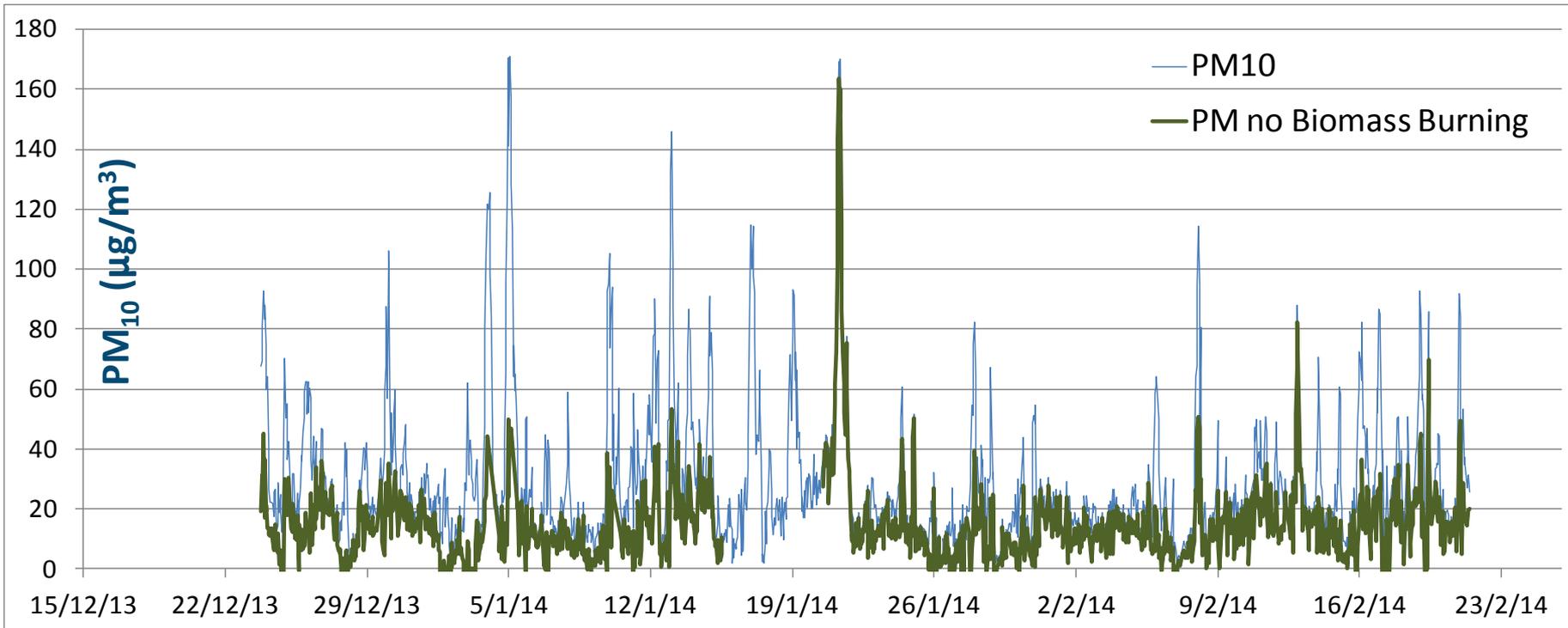


- 24 nighttime peaks
- 10 days exceeding the PM₁₀ EU threshold

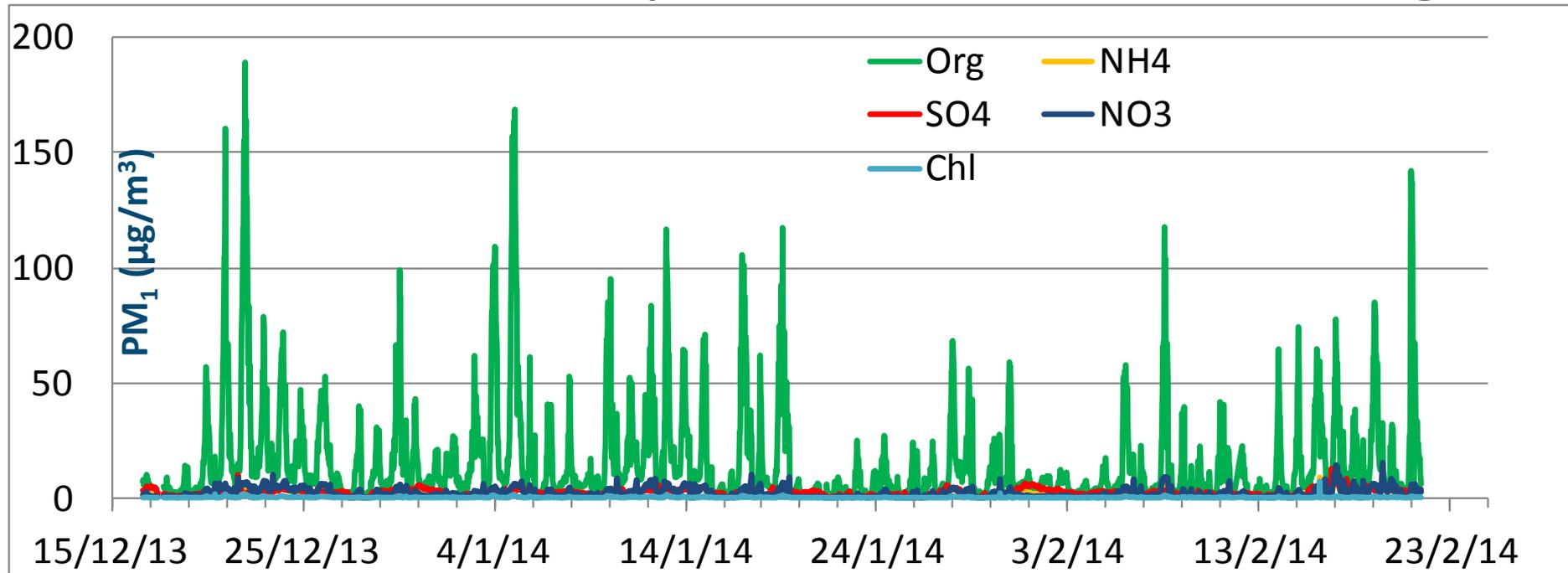
- 20 nighttime peaks
- 8 days exceeding the

Daily EU threshold for PM₁₀

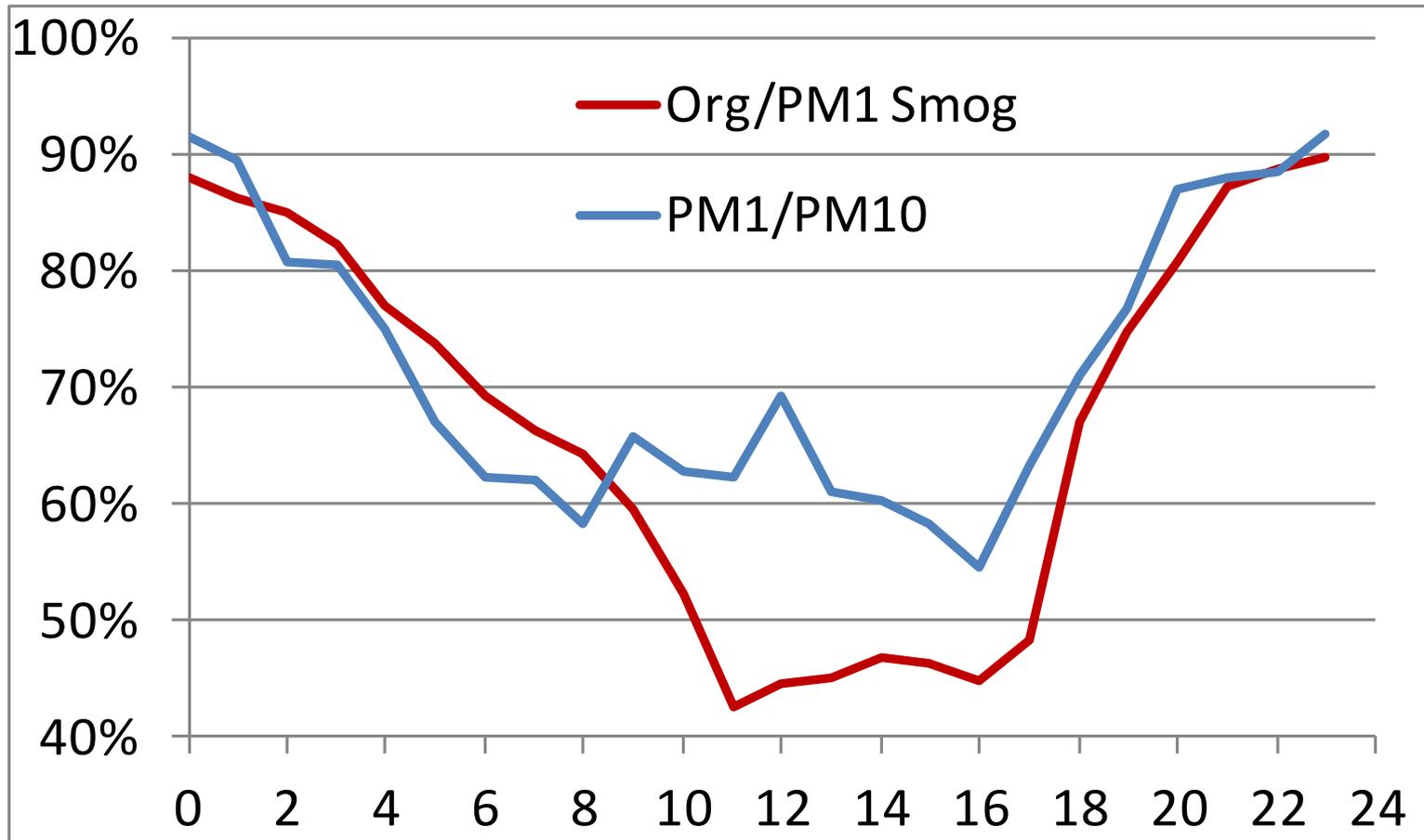
Contribution of RWB to winter air pollution



Chemical composition of RWB smog



Size distribution of RWB smog

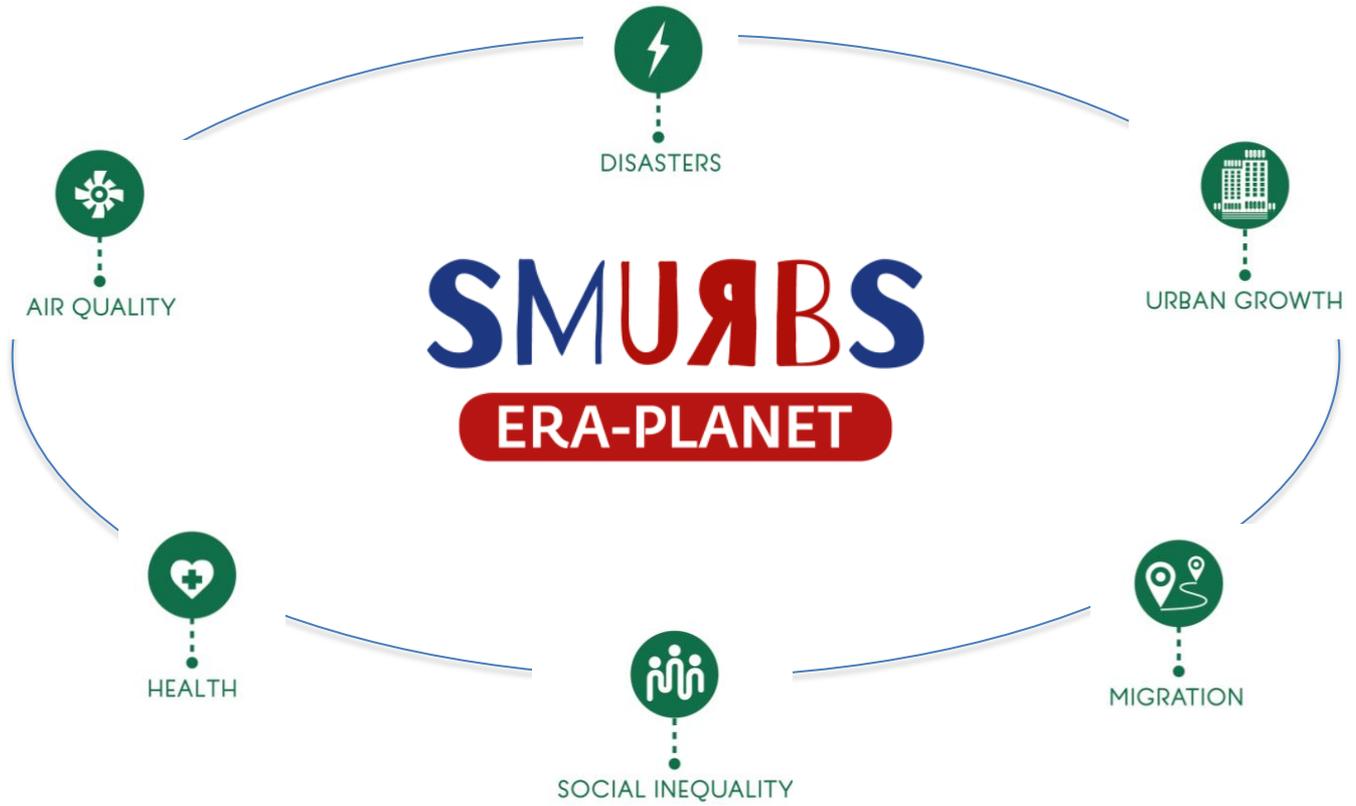


**Informed
decision makers**



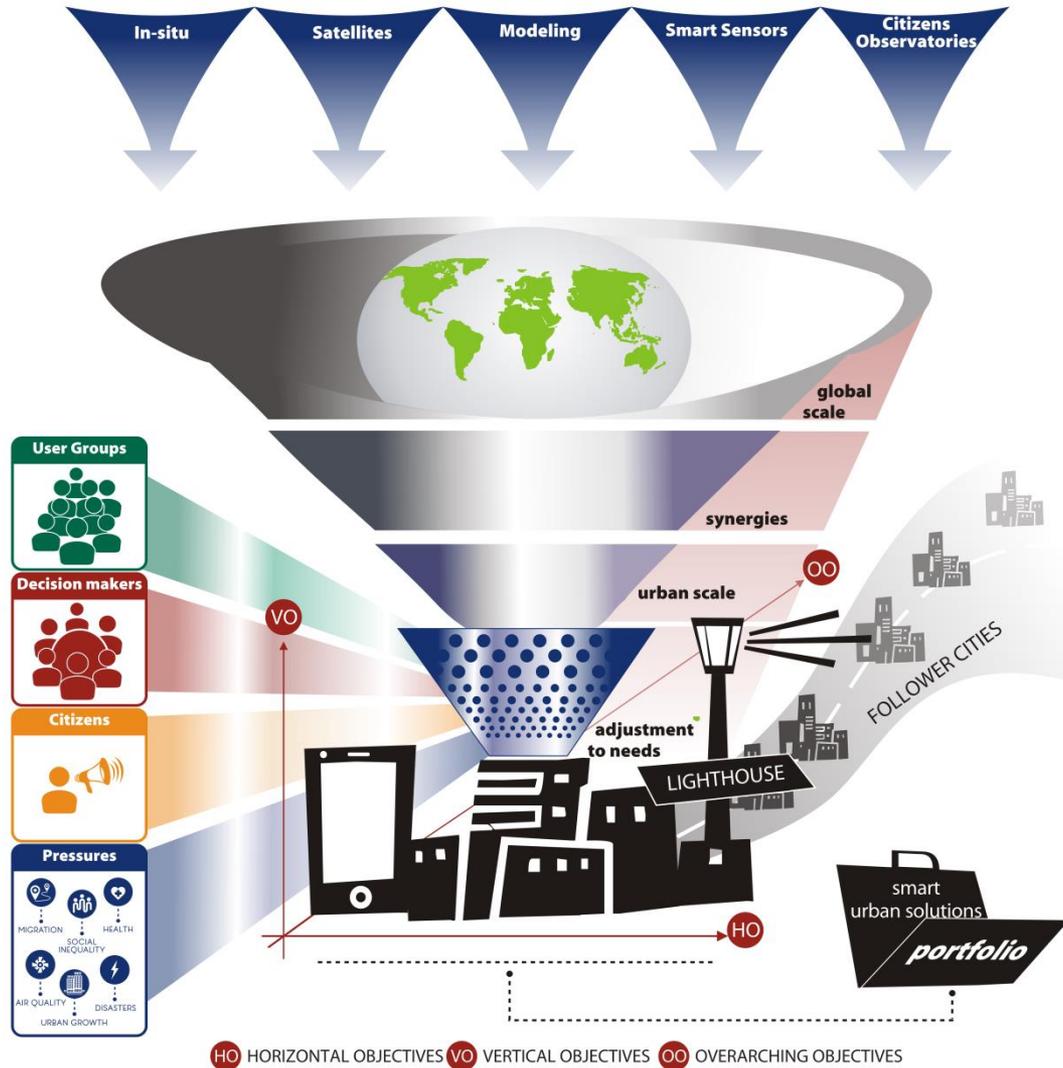
**Informed
citizens**





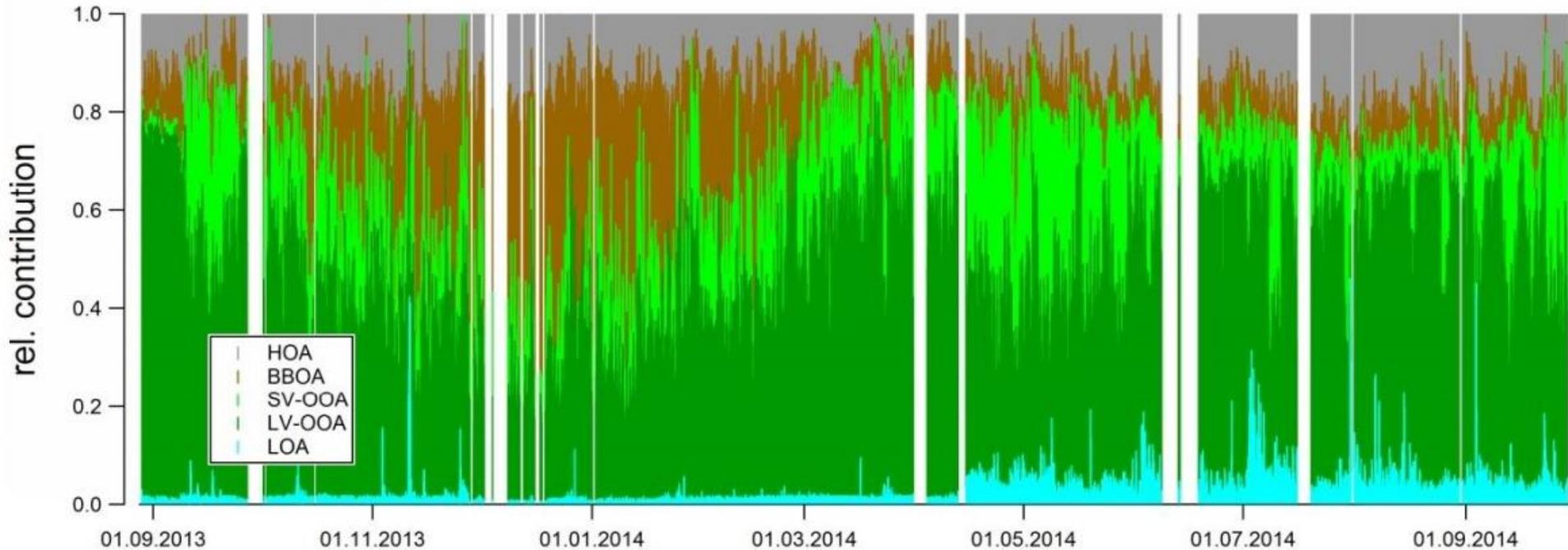
Platform synergies

EO PLATFORMS



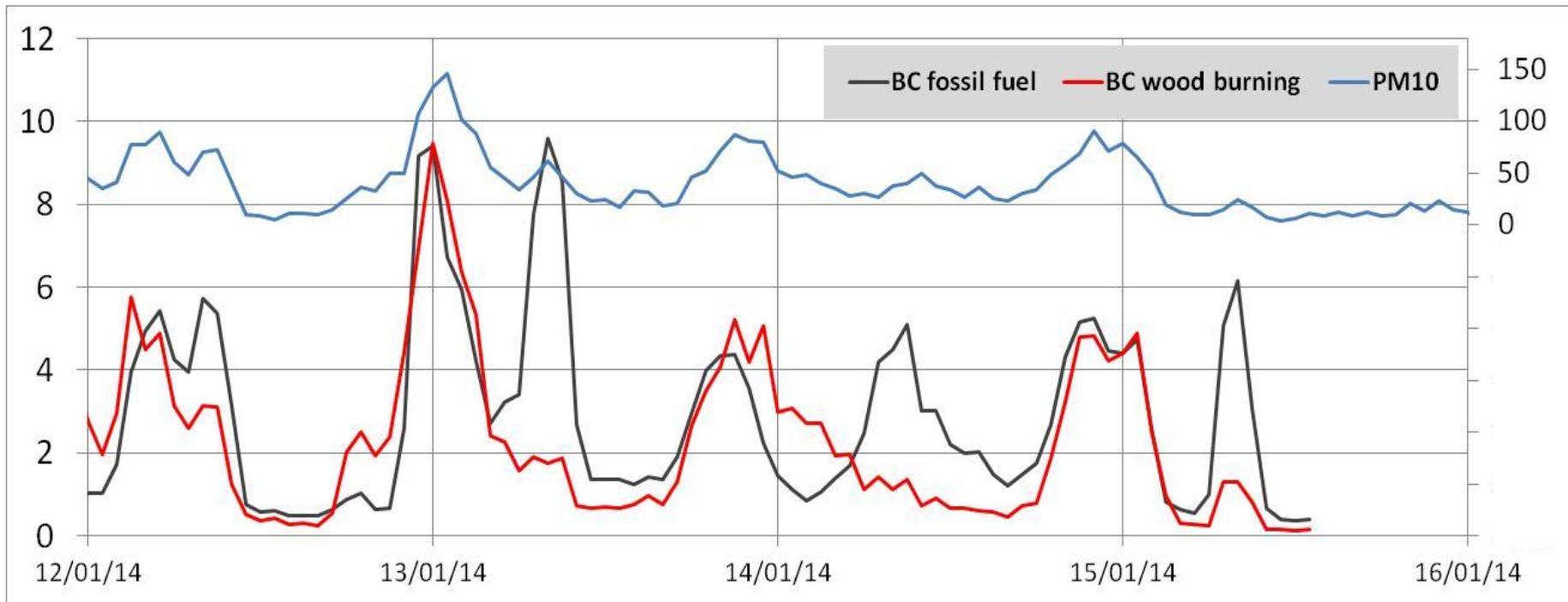
Project solutions on air quality

Source Finder (Sofi)



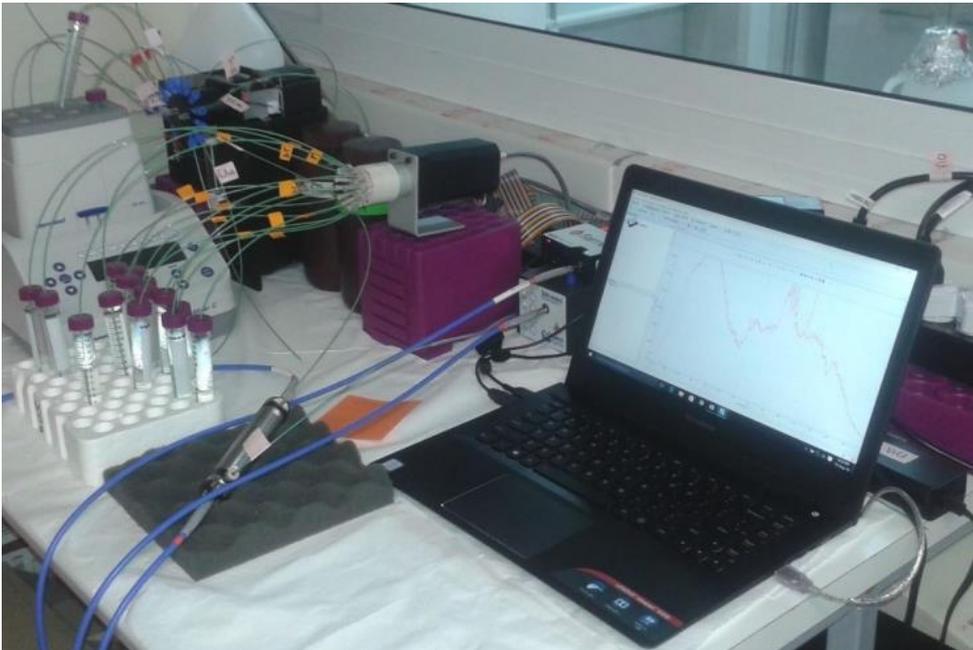
Project solutions on air quality

7-λ Aethalometer



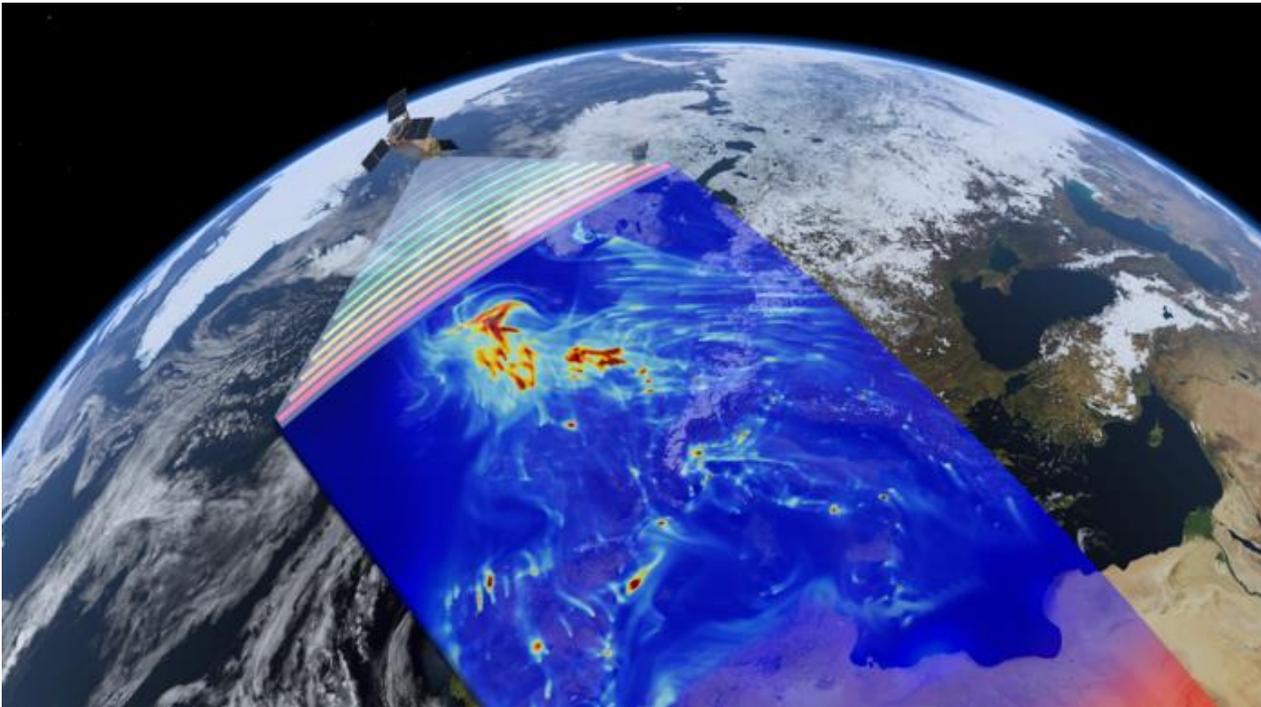
Project solutions on air quality

Aerosol-bound **reactive oxygen species** (ROS)



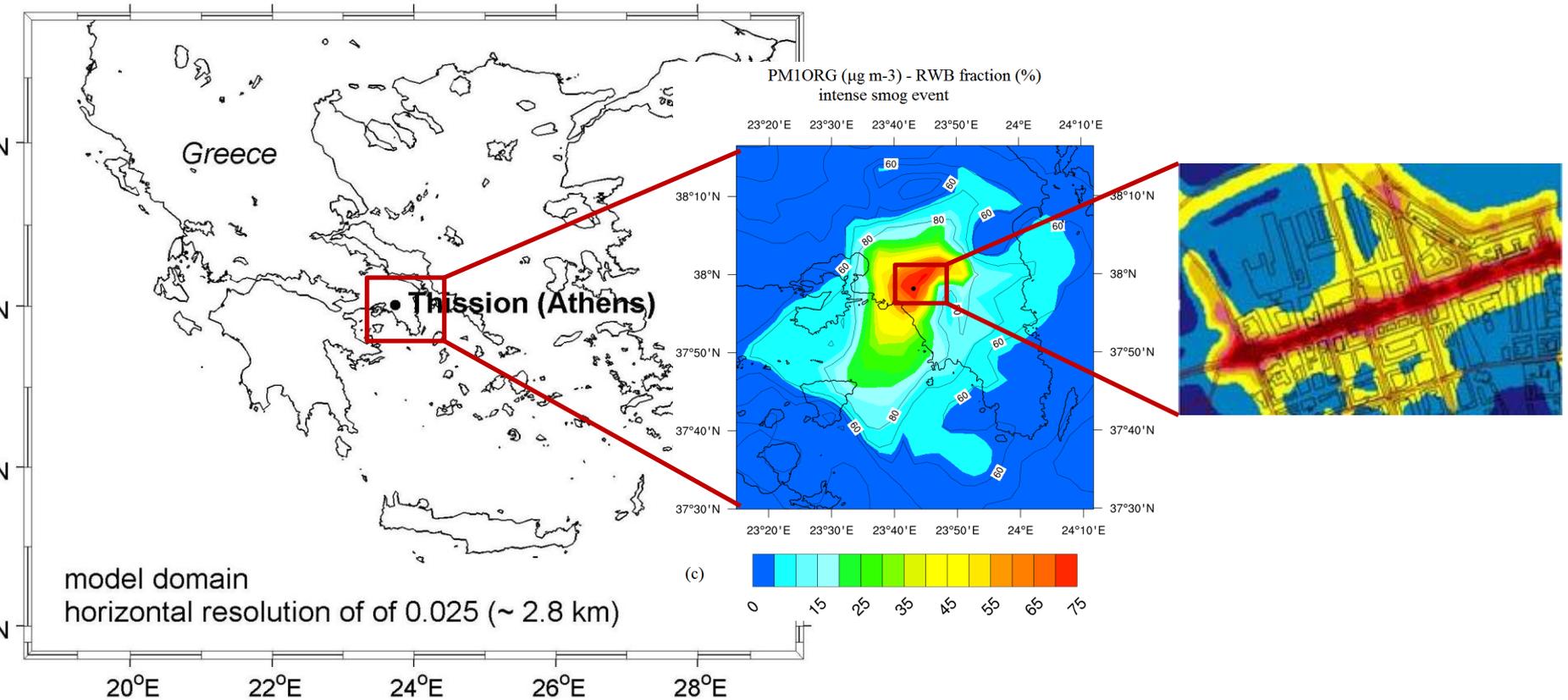
Project solutions on air quality

Satellite information – Sentinel-5P



Project solutions on air quality

Atmospheric modeling **from regional to intra-urban scales**



Project solutions on air quality

Internet of Things (IoT) incl. COs



Decision Support System (DSS)

Control center



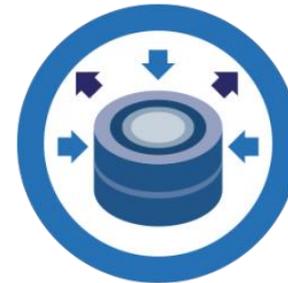
Web platform



Mobile app - CO



Data hub



Благодаря ти

Gracias

Merci

Kiitos

Děkuji

Thank you

Ευχαριστώ

Tack

Grazie

Hvala vam

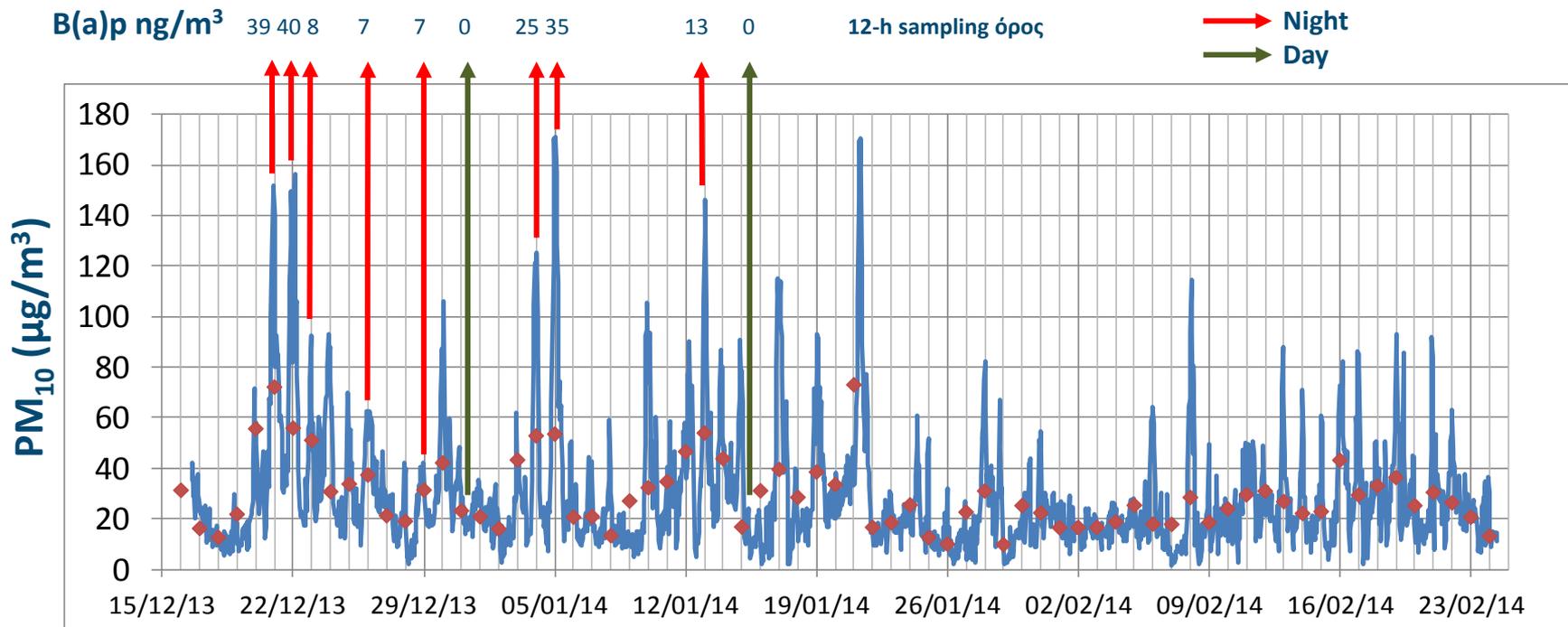
Дякую

Mulțumesc

Danke

Back up slides

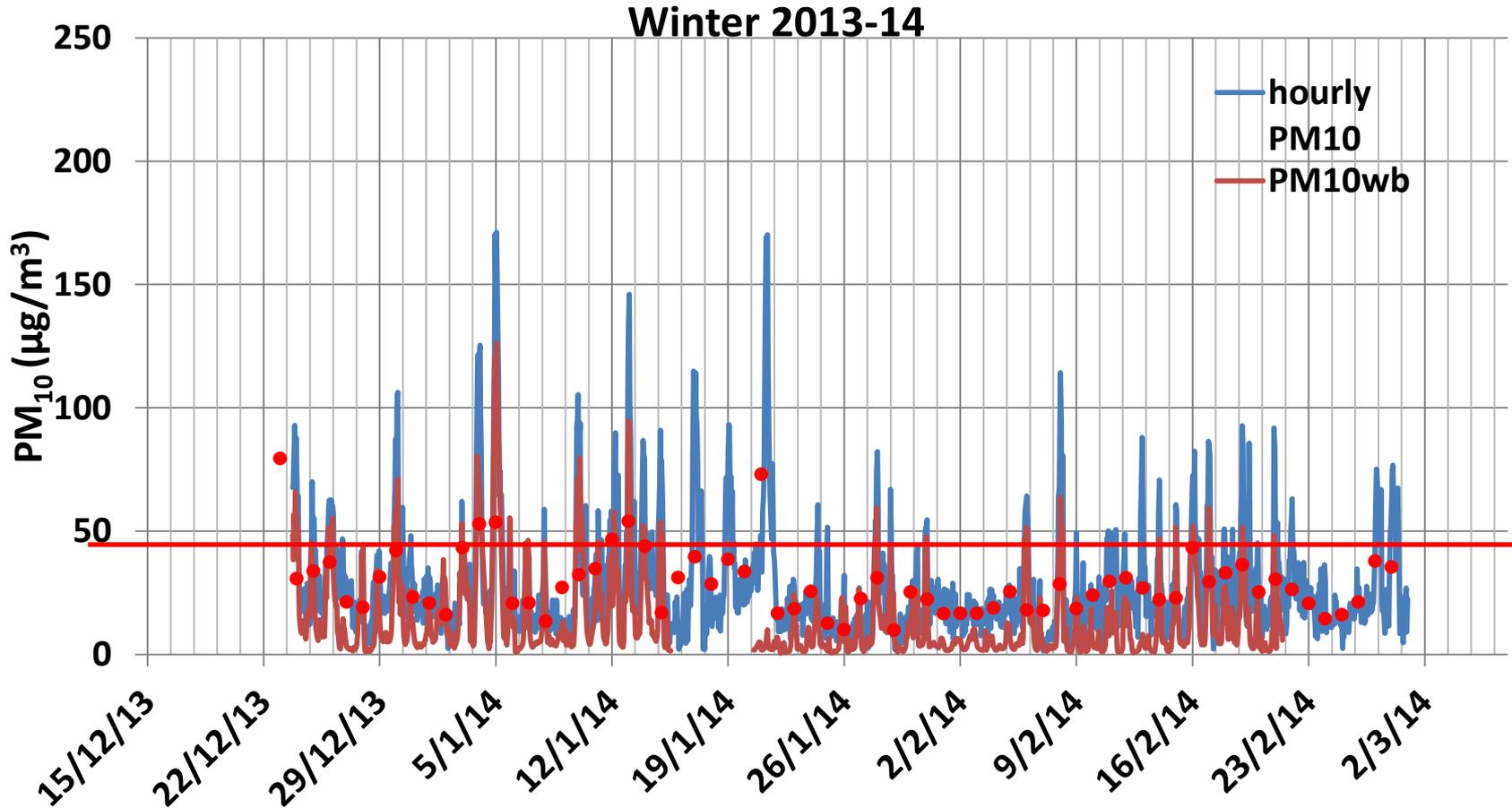
PAH – Benzo(a)pyrene



- Annual EU threshold: 1 ng/m³
- A threshold of 0.12 ng/m³ is provided by WHO corresponding to an excess lifetime risk level of 10⁻⁵

B(a)p analyses at NSCR «Demokritos»

Exceedances

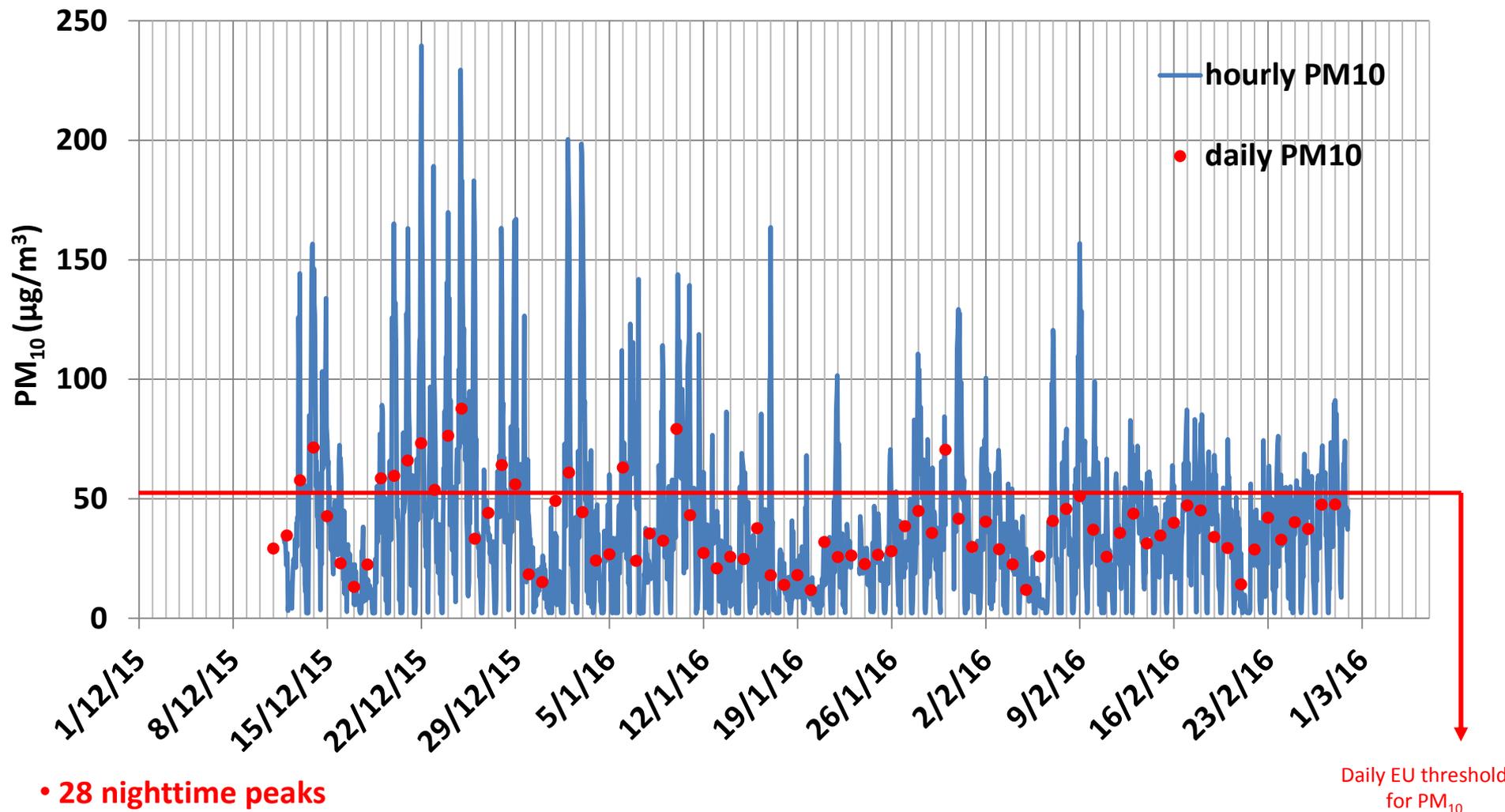


- 21 nighttime peaks
- 5 days exceeding the PM_{10} EU threshold

Daily EU threshold
for PM_{10}

Exceedances

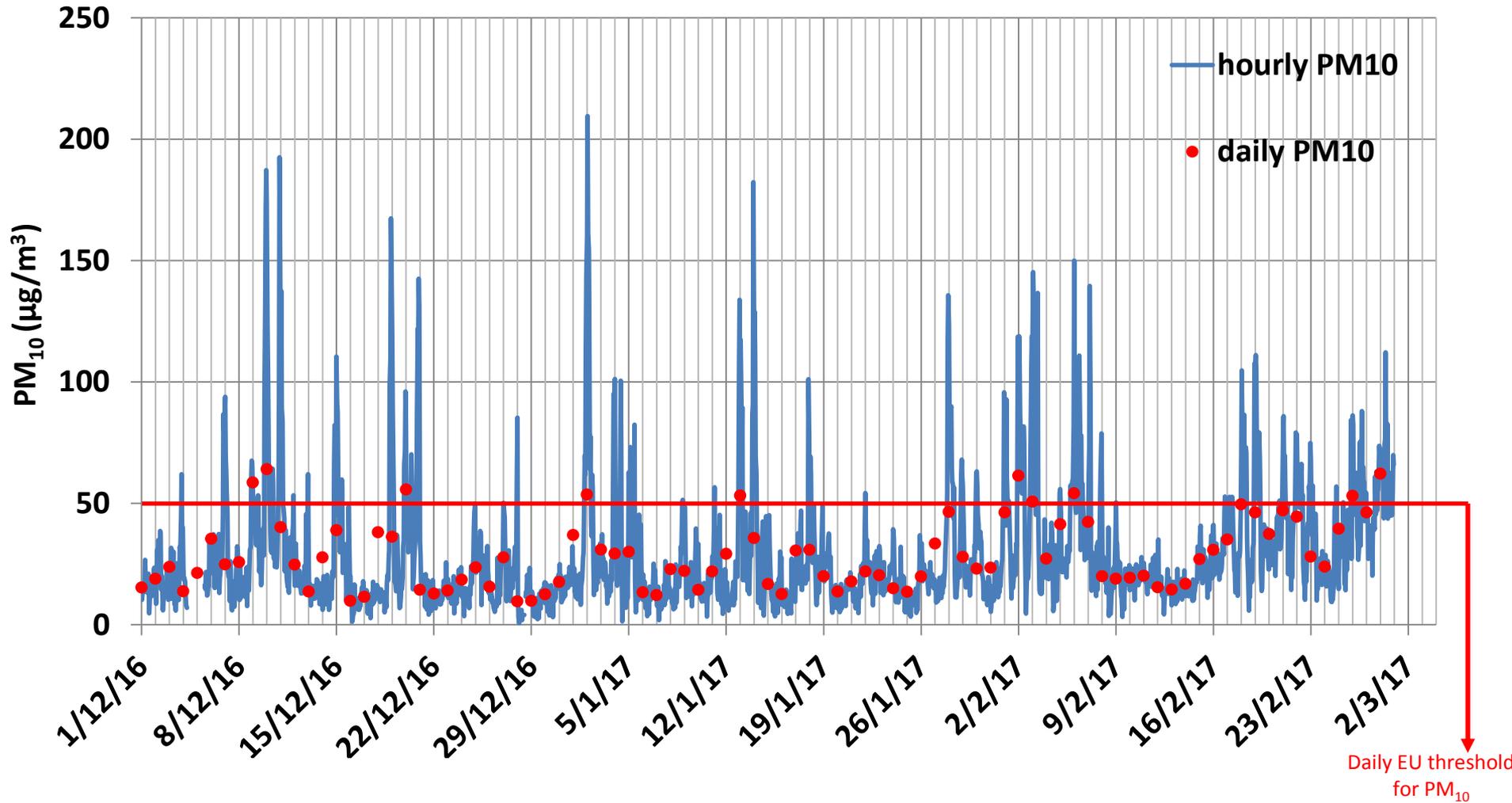
Winter 2015-16



- 28 nighttime peaks
- 16 days exceeding the PM₁₀ EU threshold

Exceedances

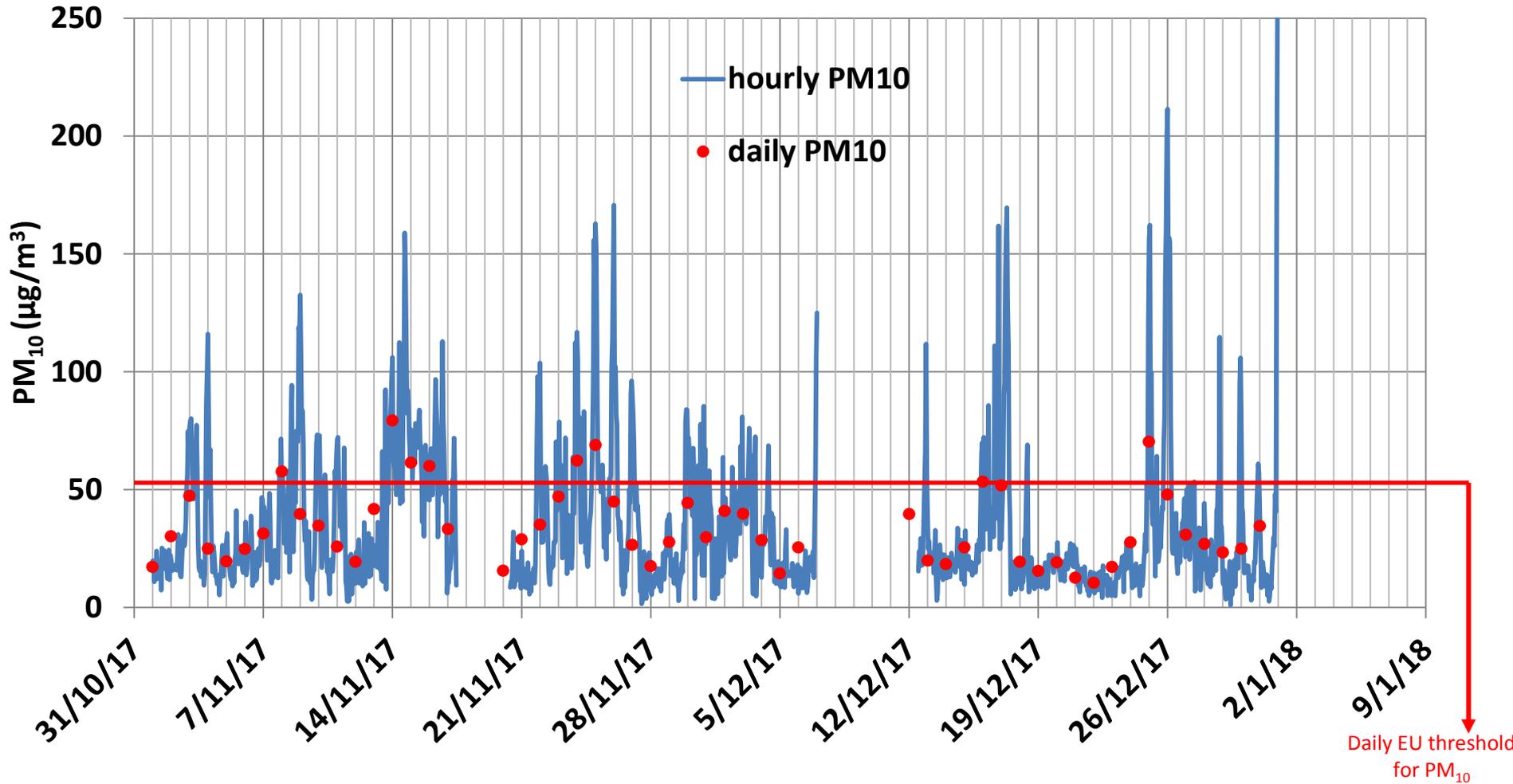
Winter 2016-17



- 24 nighttime peaks
- 10 days exceeding the PM₁₀ EU threshold

Exceedances

Winter 2017-18



- 20 nighttime peaks
- 8 days exceeding the PM₁₀ EU threshold

Project ID

- **Project Acronym:** SMURBS/ERA-PLANET
- **Project title:** SMart URBan Solutions for air quality, disasters and city growth
- **G.A. Number:** 689443
- **Type of action:** ERA-NET-Cofund
- **Starting date:** 01/09/2017
- **Duration in months:** 36
- **Call (part) identifier:** Joint Transnational Call of ERA-PLANET – Strand 1 “Smart Cities & Resilient Societies”, under (H2020-SC5-15-2015 – Strengthening the European Research Area in the domain of Earth Observation
- **Project Coordination:** National Observatory of Athens, Evangelos Gerasopoulos (egera@noa.gr)



AIR QUALITY



HEALTH



DISASTERS



URBAN GROWTH



MIGRATION



SOCIAL INEQUALITY

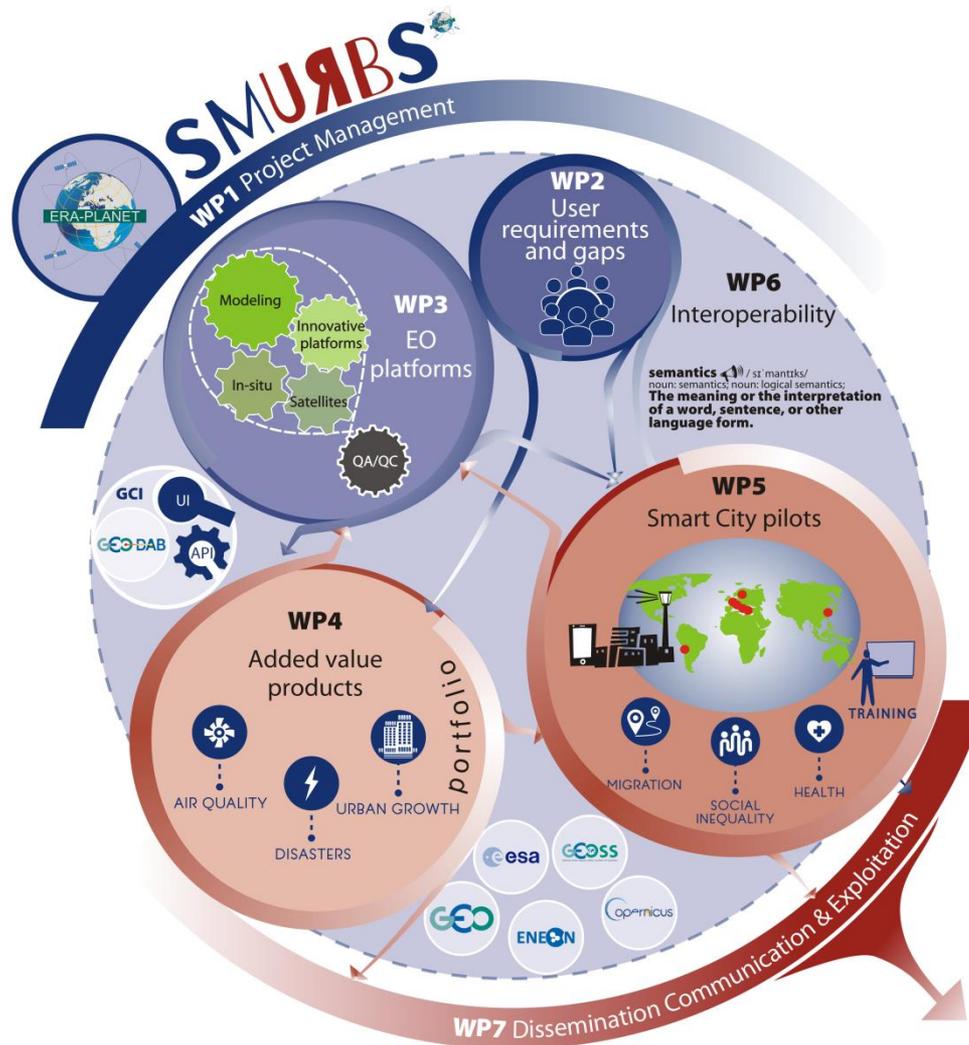
Project Consortium

- 19 partners, 12 countries
- 2.75 m€, 9.15 m€ total



- The partners are committed to involve women and men across the project activities:
- 41 women will be involved, representing 40% of the personnel involved;
 - 30% of the Tasks and 1 WP will be led by women.

Project Workflow



Project concept

