Press Release

Increasing health risks due to climate change and air pollution in Europe

Increasing temperatures and heat waves due to climate change, combined with air pollution, constitute major health risks, and could cause an increase in cardiovascular and respiratory diseases across Europe. This is the key topic in a new EU-funded research project called EXHAUSTION.

Extreme heat is responsible for health impairments and disease exacerbations, and it increases hospitalization rates for a range of maladies, particularly for cardiopulmonary diseases (CPD). Fine particulate matter ($PM_{2.5}$) and ozone (O_3) are the two major air pollutants currently threatening human health in Europe.

During periods of extreme heat and decreasing precipitation, the risk of wildland fires increases, which can cause intense air pollution, markedly in the form of $PM_{2.5}$. Especially in Southern Europe, climate projections indicate an increased risk of wildfires. High levels of O_3 have been observed during recent heat wave events, and it is projected that climate change may increase summer ozone levels.

- *Air pollution is today the environmental challenge associated with the highest mortality in Europe. A warmer climate may increase air pollution levels, and thus counteract current policies to reduce emissions of air pollutants. Studies suggest that especially surface ozone (O_3) and fine particulate matter ($PM_{2.5}$) increase in many populated regions when the temperature increases, even when emissions of air pollutants are not increasing. This could worsen health damage due to these environmental factors, says Dr. Kristin Aunan, leader of the EXHAUSTION project.*

Episodes of extreme temperatures and high levels of $PM_{2.5}$ and O_3 are likely to occur simultaneously and could occur more often, last longer, and become more intense with global warming.

Research institutes across Europe are now gathering expertise in a consortium with the ambition to substantially advance the knowledge and develop new evidence regarding the links and correlated impacts between climate change, extreme heat, air pollution, and human health in Europe. The EXHAUSTION project (Exposure to heat and air pollution in Europe – cardiopulmonary impacts and benefits of mitigation and adaptation) is financed by the EU research and innovation program Horizon2020.

The project will look at the socio-economic consequences of these impacts: how does vulnerability to impact decrease or increase depending on geographic, demographic and socio-economic factors, including quality of housing, health infrastructure, education and income level?

Well-designed adaptation strategies could avoid premature death and diseases among vulnerable groups, including the elderly, infants, chronically ill persons, and other disadvantaged groups.

- *Avoiding an increase in cardiopulmonary disease mortality and morbidity, or even reducing it, will have a tremendous impact on society through saved health care costs and through improved quality of life and reduced suffering for very many people, says Aunan.*

DRAXIS ENVIRONMENTAL S.A.
54-56 Themistokli Sofouli str., 54655, Thessaloniki, GR
Tel. +30 2310 274566

Researchers in the project are gathered in Oslo, Norway 1-3 July 2019 for the launch of the project.

Contact: Kristin Aunan, project leader CICERO Center for International Climate Research, kristin.aunan@cicero.oslo.no, phone: +47 99 00 52 69

Overall project overview
Alexandra Schneider, Helmholtz Zentrum München (HMGU), alexandra.schneider@helmholtz-muenchen.de, +49 89 31 87 35 12

Leader of work package on Epidemiology: Exposure-response relationships for cardiopulmonary diseases.
Ulas Ims, Aarhus University (AU), ulas@envs.au.dk, +45 87 15 86 62

Leader of work package on Climate projections: High-resolution projections of climate and air pollution.
Antoni Gasparrini, London School of Hygiene and Tropical Medicine (LSHTM), Antonio.Gasparrini@lshtm.ac.uk, +44 20 79 27 24 06

Leader of work package on Health impacts projection under climate change and adaptation scenarios.
Marc Suhrcke, Luxembourg Institute of Socio-Economic Research (LISER), marc.suhrcke@liser.lu,

Leader of work package on Projected socio-economic impacts and benefits of adaptation and mitigation.
Gunnell E. Sandanger, CICERO Center for International Climate Research, Senior Communications Advisor, gunnell.sandanger@cicero.oslo.no, +47 40 24 70 25

EXHAUSTION is a EU-funded research project led by CICERO Center for International Climate Research (Norway), and includes 13 other research institutions and partners: University of Oslo (Norway), Norwegian Institute of Public Health (Norway), Aarhus University (Denmark), Helmholtz Zentrum München (Germany), University of Porto (Portugal), National Meteorological Administration (Romania), National and Kapodistrian University of Athens (Greece), London School of Hygiene and Tropical Medicine (UK), Luxembourg Institute of Socio-Economic Research (Luxembourg), Department of Epidemiology of the Lazio Region Health Service in Roma (Italy), Finnish Meteorological Institute (Finland), InfoDesignLab AS (Norway), DRAXIS Environmental S.A. (Greece).