

TECHNICAL REPORT

D6.1: Final report for each industrial sector incorporating the final recommendations/conclusions



Authors: Lars Nybo, Andreas D. Flouris, Tord Kjellstrom, Lučka Kajfež Bogataj, Leonidas Ioannou, Jacob Piil, Nathan Morris, Urša Ciuha, Igor B. Mekjavić, Anurag Bansal, Josh Foster, James Goodwin, George Havenith, Emanuele Crocetti, Gianpaolo Romeo, Miriam Levi, Alessandro Messeri, Marco Morabito, Boris Kingma, Tjaša Pogačar

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D 6.1 – Regional and sector specific vulnerability to occupational heat-stress – industry specific observations, recommendations and guidance for effective mitigation

Introduction

In this report, you will find an overview of regional, industry specific and individual vulnerability to current and future occupational heat-stress. Vulnerability is considered and evaluated as productivity impact [loss] or increased heat-related health risk. The document includes regional effect analyses identifying inequalities across EU and case studies with further specification of sub-groups of workers particularly vulnerable to environmental heat-stress effects. In section 2, an outline is given on the overall approach leading to the adjusted industry-specific guidance documents (provided for each industry in sections 3.1-3.5). This process based on feedback [general questionnaires], sparring with stakeholders across industries in addition to the specific “WP 6 case studies”. Part 3 is divided into sub-sections per industry and the specific case studies with testing of selected relevant strategies and solutions for reducing the impact of heat on workers’ risk of occupational heat strain. The industry specific sections includes link to infographics and videos (see also <https://www.heat-shield.eu> -> “public guidance”) targeting either the employee (individual worker or group of “end-users”) or employers (managers - private or public “work organisers”) with the combined info of relevance for the local health-safety advisor or policy-makers. Overall aiming at facilitating that “end-users” [workers at risk] are provided with relevant options (i.e. effective, feasible and sustainable solutions), knowhow on how to implement and basic comprehension of the importance to mitigate heat-stress for maintained health and performance.

1. Inequality aspects across EU – regional and industry-specific impacts.

1.1. Overall effects per industry and region

To identify how current and projected future heat stress levels impact productivity, and thus economic output across EU (regional analyses for 274 European regions into a regionalised general equilibrium economic model), we have analysed present and future economic damages due to reduced labour productivity caused by extreme heat in Europe (Garcia-Leon et al., 2021). Current impacts, analysed for hot years (2003, 2010, 2015, and 2018) were compared to the average historical period 1981–2010. In the selected years, the total estimated damages attributed to heatwaves amounted to 0.3–0.5% of European gross domestic product (GDP). However, as illustrated on Figure 1, the identified losses were highly heterogeneous across EU-regions, consistently showing GDP impacts beyond 2% in the most vulnerable regions and with