

EGU22-5175

<https://doi.org/10.5194/egusphere-egu22-5175>

EGU General Assembly 2022

© Author(s) 2022. This work is distributed under the Creative Commons Attribution 4.0 License.



Completing Urban GHG Emissions Data to Assess the Effectiveness of Climate Action Plans in Europe

Jessica Page¹, Haozhi Pan², and Zahra Kalantari^{1,3}

¹Stockholm University, Physical Geography, Water, Permafrost and Environmental systems, Stockholm, Sweden

(jessica.page@natgeo.su.se)

²School of International and Public Affairs; China Institute for Urban Governance; School of Design, Shanghai Jiao Tong University

³Department of Sustainable Development, Environmental Science and Engineering, Sustainability Assessment and Management, KTH Royal Institute of Technology

Urban areas are major contributors to global greenhouse gas (GHG) emissions. To address climate change, many cities have developed climate action plans (CAPs) as strategic roadmaps to reduce their emissions and strive for emission neutrality and climate resilience by 2050 or before. It has been more than a decade since the first of these plans were put in place, and it is now important to evaluate these plans and to assess whether city-level climate ambitions will be realised or perhaps need adjustment to pursue for improvements in climate resilience over time

This work aims to further our understanding of urban GHG emissions, by completing existing urban carbon emissions data with blue-green contributions to the urban carbon cycle. In a previous study, it was found that the inclusion of blue-green emissions in urban carbon accounting in Stockholm, Sweden had a significant impact on that region's ability to reach net zero emissions in the coming decades (Page et al., 2021). In this study, we complete the urban emissions data for cities across the European Union (EU) in order to assess if, and for which types of cities, the inclusion of blue-green emissions in the GHG accounting is similarly relevant.

Furthermore, we will use data about the CAPs produced and implemented by these cities together with the completed GHG emissions in order to assess whether the actions and plans made by many European cities have actually had any impact on the emissions from these cities. The inclusion of blue-green emissions and sequestrations in this assessment is particularly important, as many of the strategies included in CAPs impact blue-green areas, such as the implementation of nature-based solutions (NBS).

Conclusions will be drawn about the role of green-blue areas in urban GHG emissions, the role which CAPs have played in reducing emissions in European cities, and how and where these could potentially be adapted to further reduce future GHG emissions in urban areas.

Keywords: Sustainable cities; Greenhouse Gas Emissions; Nature-based Solutions; Climate Action Plans

References:

Page J, Kåresdotter E, Destouni G, et al. (2021) A more complete accounting of greenhouse gas emissions and sequestration in urban landscapes. *Anthropocene* 34: 100296. DOI: 10.1016/j.ancene.2021.100296.