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CarboWien: Tall tower eddy covariance measurements of CO_2 emissions from the city of Vienna

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Cities produce over 70% of global anthropogenic greenhouse gas (GHG) emissions and thus represent priority targets for measures aiming to mitigate climate change. With the success of urban mitigation measures depending on robust systems to quantify associated emissions reductions, cities are seeking innovative ways to support and improve urban GHG emissions monitoring. In December 2017, the University of Natural Resources and Life Sciences, Vienna, the Environment Agency Austria, and the telecommunications company A1 Telekom Austria AG initiated the CarboWien project. CarboWien, which is part-funded by the partners and part-funded by the Vienna municipal government, is exploring the feasibility and utility of direct GHG emission measurements in Austria's capital city using a tall tower eddy covariance approach. Just before Christmas 2017, an eddy covariance system was installed on a specially built mast on the top platform of the Arsenal radio tower in Vienna's third district. Given the location, local wind field and the ca. 150 m measurement height, CarboWien is to deliver the first direct measurements of net CO_2 emissions from much of the city's urban fabric. Preliminary data and the project outlook are to be presented.