

*Supplement of*

## **Trends in China's anthropogenic emissions since 2010 as the consequence of clean air actions**

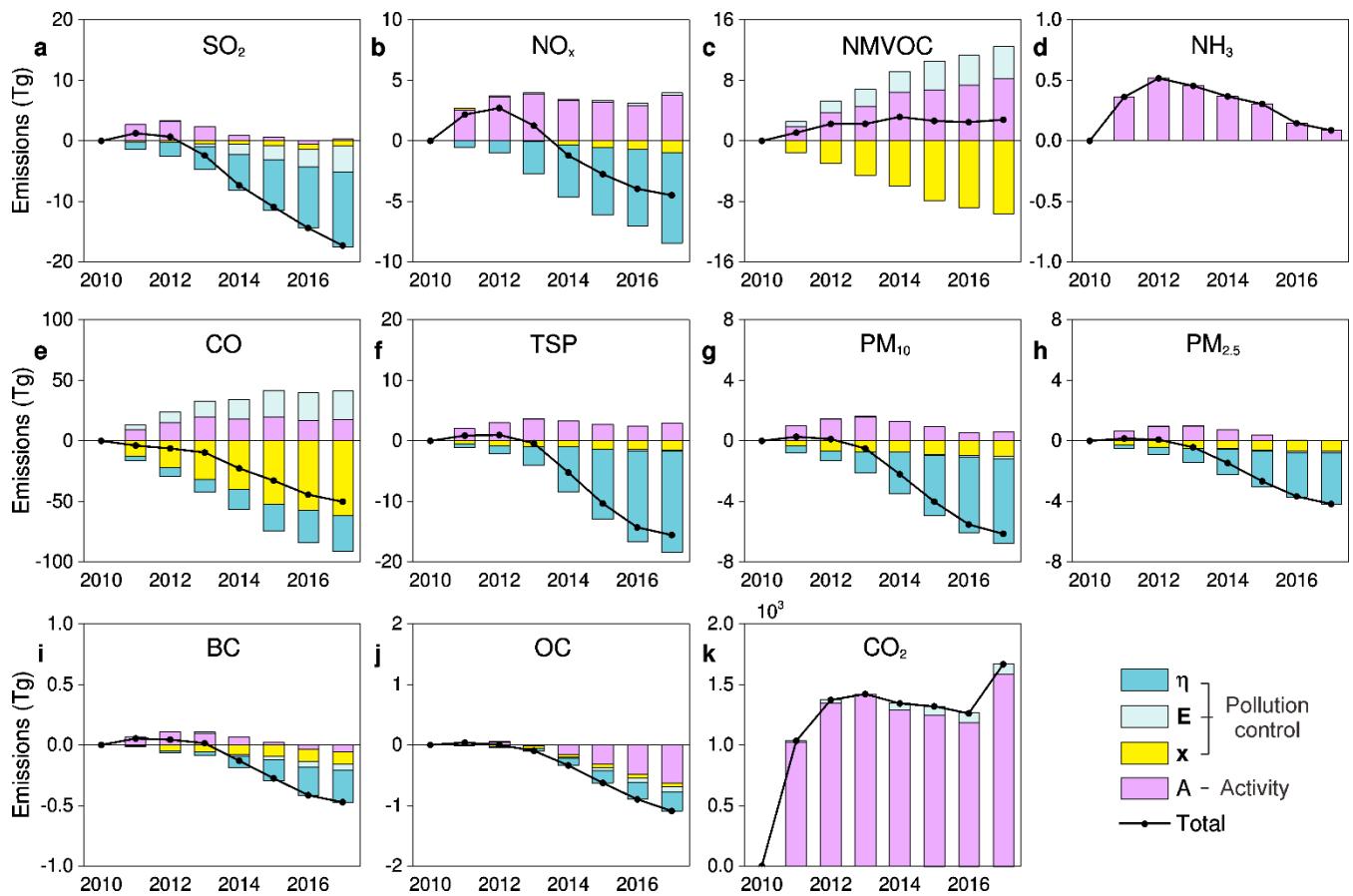
5 Bo Zheng<sup>1,†</sup>, Dan Tong<sup>2</sup>, Meng Li<sup>2</sup>, Fei Liu<sup>1</sup>, Chaopeng Hong<sup>2</sup>, Guannan Geng<sup>2</sup>, Haiyan Li<sup>1</sup>, Xin Li<sup>2</sup>,  
Liqun Peng<sup>1</sup>, Ji Qi<sup>1</sup>, Liu Yan<sup>2</sup>, Yuxuan Zhang<sup>2</sup>, Hongyan Zhao<sup>2</sup>, Yixuan Zheng<sup>2</sup>, Kebin He<sup>1,2</sup>, and Qiang  
Zhang<sup>2</sup>

<sup>1</sup>State Key Joint Laboratory of Environment Simulation and Pollution Control, School of Environment, Tsinghua University, Beijing 100084, People's Republic of China

<sup>2</sup>Ministry of Education Key Laboratory for Earth System Modeling, Department of Earth System Science, Tsinghua  
10 University, Beijing, China

† Present address: Laboratoire des Sciences du Climat et de l'Environnement, CEA-CNRS-UVSQ, UMR8212, Gif-sur-Yvette, France

Correspondence to: Qiang Zhang ([qiangzhang@tsinghua.edu.cn](mailto:qiangzhang@tsinghua.edu.cn))



**Figure S1. Decomposition analysis results of changes in air pollutants and CO<sub>2</sub> emissions.** The change in 2010–2017 emissions are decomposed into four factors (i.e., A, x, E and  $\eta$ ) using the method of Index Decomposition Analysis (Sect. 3.2). A represents the contribution from activities, x represents the effect from technology evolving over time, E includes fuel quality improvement (e.g., low sulfur, low ash, high heating value coals) as well as deterioration of vehicle emissions (figures c and e), and  $\eta$  represents emission reductions caused by end-of-pipe abatement measures. The black curve represents the change in total emissions.