Flux and Radiocarbon Evidence of Urban Carbon Emission Reductions under Climate Mitigation Policies

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Tables:

Table S1.
Sectoral conversion factors for coal, petroleum and natural gas products from Shaanxi province to Xi'an city.

Energy consumption sectors	Conversion factors
Agriculture, Forestry, Animal Husbandry and Fishery	Gross Output Value of Agriculture, Forestry, Animal Husbandry and Fishery
Construction	Gross Output Value of Consumer Goods
Transportation, Storage and Postal Services	Vehicle ownership
Wholesale, Retail Trade, Hotels and Restaurants	Total Retail Sales of Consumer Goods
Residential Consumption	Population
Others	Gross Domestic Product

Figures:

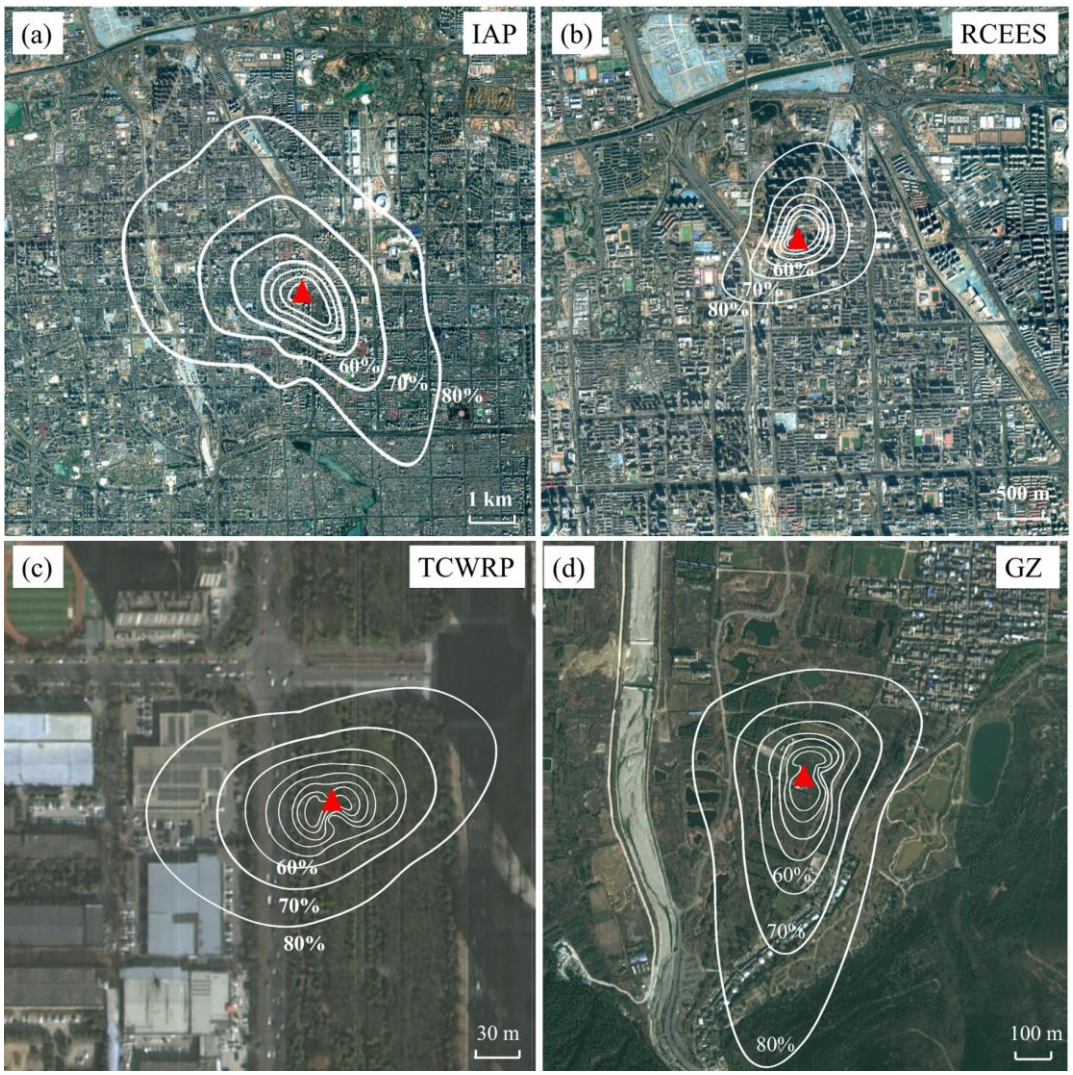

Figure S1. The footprint distributions of eddy covariance (EC) measurements at the observation sites in Beijing and Xi'an. (a) IAP and (b) RCEES are the two urban observation sites in Beijing. (c) TCWRP and (d) GZ are the urban and rural observation sites in Xi'an, respectively. Satellite basemap: Esri World Imagery. Sources: Esri, Maxar, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community | Powered by Esri. All annotations were added by the authors.

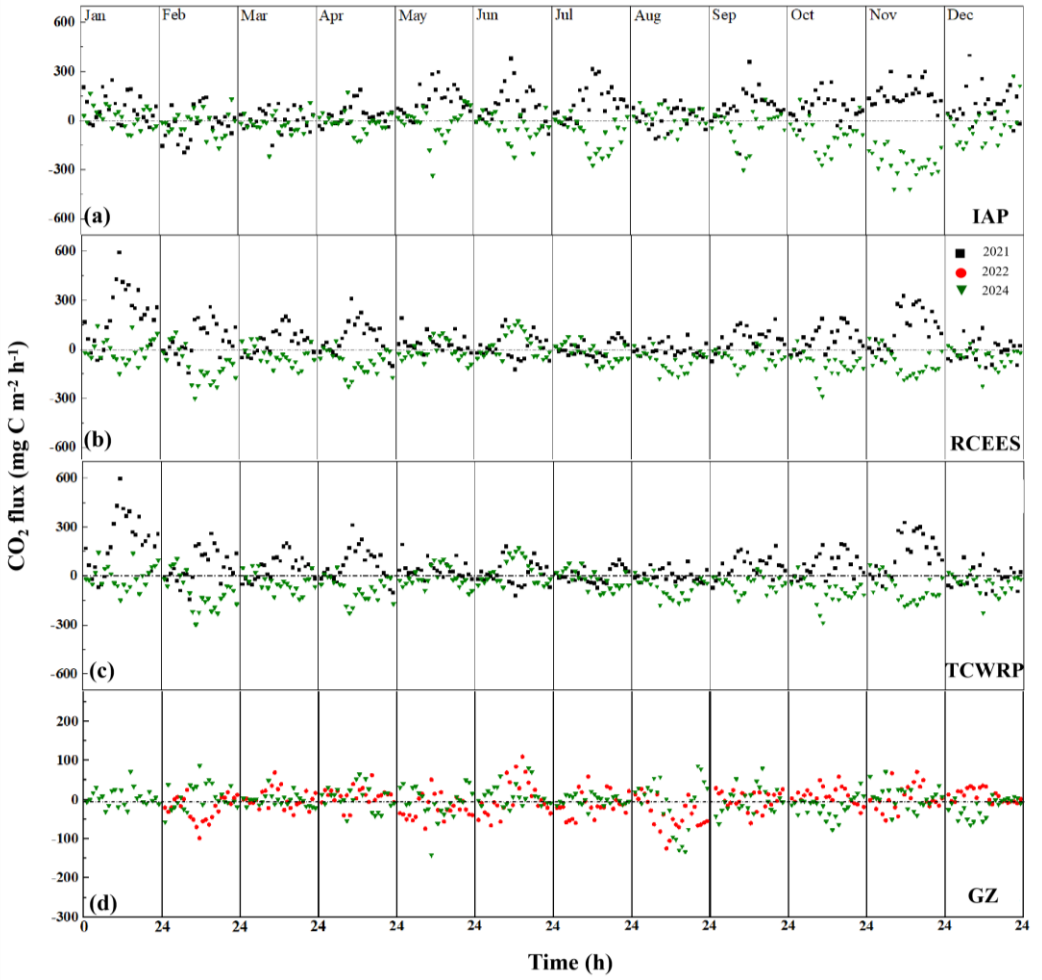

Figure S2. The CO_2 fluxes difference between hour values during 2021 and 2024 and the corresponding average values during 2021–2024 of the observation periods for each month at IAP, RCEES and TCWRP sites. For GZ site, due to the absence of 2021 data, the difference was calculated between 2022 and 2024 hourly values and the corresponding 2022–2024 monthly average values. (a) IAP and (b) RCEES are the two urban observation sites in Beijing. (c) TCWRP and (d) GZ Station are the urban and rural observation sites in Xi'an, respectively.

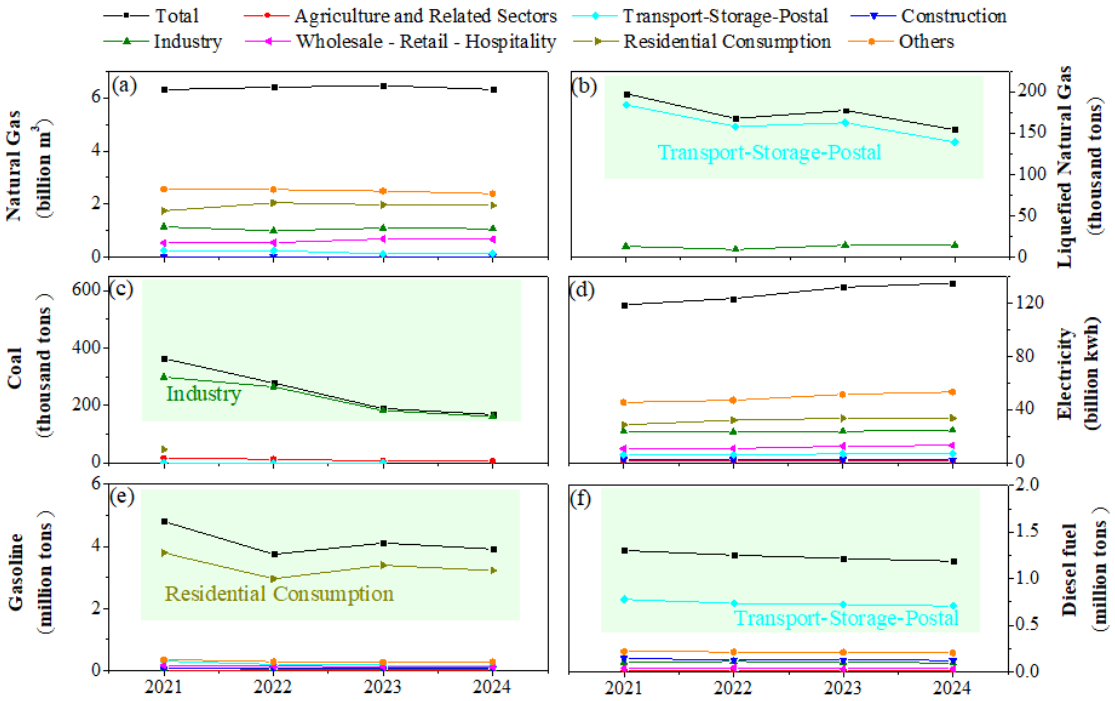

Figure S3. Statistical data for Beijing from 2021 to 2024, including (a) natural gas, (b) liquefied natural gas, (c) coal, (d) electricity, (e) gasoline and (f) diesel fuel consumption in the seven energy-consuming sectors. The energy-consuming sectors include (1) Agriculture, forestry, animal husbandry and fishery (Agriculture and Related Sectors), (2) Industry, (3) Construction, (4) Transportation, storage and postal services (Transport-Storage-Postal), (5) Wholesale, retail trade, hotels and restaurants (Wholesale-Retail-Hospitality), (6) Residential consumption, and (7) Others.

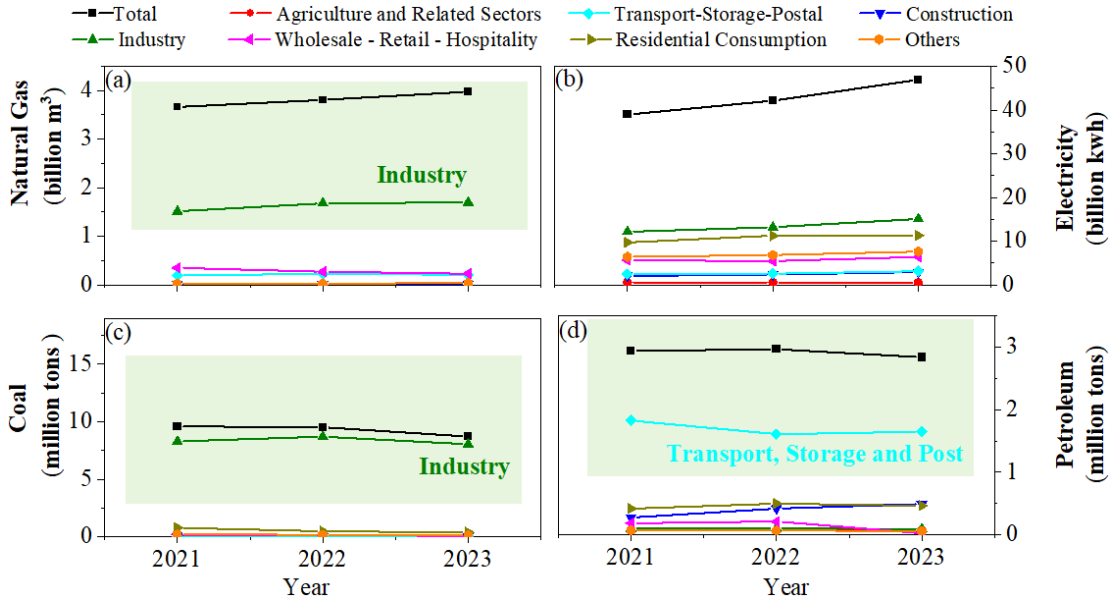

Figure S4. Statistical data for Xi'an from 2021 to 2023, including (a) natural gas, (b) electricity, (c) coal and (d) petroleum consumption in the seven energy-consuming sectors. The energy-consuming sectors include (1) Agriculture, forestry, animal husbandry and fishery (Agriculture and Related Sectors), (2) Industry, (3) Construction, (4) Transportation, storage and postal services (Transport-Storage-Postal), (5) Wholesale, retail trade, hotels and restaurants (Wholesale-Retail-Hospitality), (6) Residential consumption, and (7) Others.