Supporting Information for

**Climate impacts of emission reductions in China during 2013–
2017**

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Figure S1. Spatial distributions of differences in precipitation rate (mm day^{-1}) due to the changes in (a) aerosols, (b) O_3 , and (c) both aerosols and O_3 between 2013 and 2017, calculated as the differences between Base and AClean simulations (AClean–Base), between AClean and AClean_ O_3 (AClean_ O_3 –AClean), and between Base and AClean_ O_3 (AClean_ O_3 –Base), respectively. Differences in areas that are statistically significant at 90 % from a two-tailed t test are stippled.

Table S1. Regional and seasonal mean column burdens of PM_{2.5} (mg m⁻²) from Base and AClean simulations, and their absolute (mg m⁻²) and percentage (%) differences in March–April–May (MAM), June–July–August (JJA), September–October–November (SON), December–January–February (DJF), and annual mean (ANN).

Region	Simulation	MAM	JJA	SON	DJF	ANN
NCP	Base	29.16	35.18	31.17	31.93	31.86
	AClean	20.51	24.71	22.23	22.65	22.53
	AClean-Base	-8.65	-10.47	-8.94	-9.28	-9.34
	(AClean-Base)/Base	-29.59%	-29.50%	-28.45%	-29.23%	-29.18%
SCB	Base	48.57	33.99	42.16	72.40	49.28
	AClean	34.17	23.73	28.80	49.74	34.11
	AClean-Base	-14.41	-10.26	-13.36	-22.67	-15.17
	(AClean-Base)/Base	-29.58%	-29.54%	-31.25%	-30.52%	-30.28%
YRD	Base	30.19	24.65	26.34	32.46	28.41
	AClean	23.25	19.27	19.94	25.16	21.90
	AClean-Base	-6.95	-5.38	-6.41	-7.30	-6.51
	(AClean-Base)/Base	-22.97%	-21.67%	-24.19%	-22.44%	-22.81%
PRD	Base	27.04	14.87	22.02	22.70	21.66
	AClean	21.95	12.43	17.47	17.76	17.40
	AClean-Base	-5.10	-2.45	-4.54	-4.94	-4.26
	(AClean-Base)/Base	-18.76%	-16.17%	-20.64%	-21.53%	-19.55%
NEP	Base	14.31	21.91	14.44	10.49	15.29
	AClean	11.15	17.71	11.29	8.10	12.06
	AClean-Base	-3.16	-4.21	-3.15	-2.40	-3.23
	(AClean-Base)/Base	-21.50%	-18.75%	-21.69%	-22.02%	-20.65%
YGP	Base	34.55	16.62	21.33	29.24	25.43
	AClean	29.40	13.08	16.29	21.75	20.13
	AClean-Base	-5.15	-3.55	-5.04	-7.49	-5.31
	(AClean-Base)/Base	-14.46%	-21.02%	-23.53%	-24.86%	-20.38%
FWP	Base	29.62	30.94	31.61	37.52	32.42
	AClean	20.64	22.34	22.30	25.95	22.81
	AClean-Base	-8.98	-8.60	-9.32	-11.57	-9.62
	(AClean-Base)/Base	-30.32%	-27.63%	-29.36%	-30.80%	-29.58%

Table S2. Changes in PM_{2.5} column burden, changes in effective radiative forcing induced by aerosol-radiation interactions (ERF_{ari}), and changes in temperature (T) averaged in eastern China due to emission reductions of aerosols and precursors between 2013 and 2017 from individual sectors, including energy transformation and extraction (ENE), industrial combustion and processes (IND), residential, commercial and other (RCO), surface transportation (TRA), solvents (SLV), waste disposal and handling (WST) and international shipping (SHP). Note that the temperature changes are calculated as the difference between AClean and Base, linearly scaled by the ratio of sectoral ERF_{ari} to the total ERF_{ari}.

	ENE	IND	RCO	SHP	SLV	TRA	WST
Burden	-1.33	-3.34	-0.38	-0.17	0.26	-0.09	0.07
(mg m ⁻²)	(26.8%)	(67.0%)	(7.6%)	(3.5%)	(-5.2%)	(1.8%)	(-1.4%)
ERF _{ari} (W	0.20	0.50	-0.03	0.02	-0.05	0.05	-0.01
m ⁻²)	(29.0%)	(72.3%)	(-4.2%)	(3.5%)	(-7.1%)	(7.6%)	(-1.0%)
T (°C)	0.025	0.063	-0.004	0.003	-0.006	0.007	-0.001

Table S3. Comparison of the results in this work with those reported in previous studies. Note that Dang and Liao (2019) only considered ERF_{ari} in their study.

Reference	Model	Period	Region	ERF (W m^{-2})		T ($^{\circ}\text{C}$)	
				Aerosol	O ₃	Aerosol	O ₃
This paper	CESM2	2013–2017	Eastern China (110–122.5°E, 22–40°N)	1.18	0.81	0.09	0.07
Zheng et al. (2020)	CESM1	2006–2017	East Asia (70–155°E, 0–55°N)	0.48	/	0.12	/
Dang and Liao (2019)	GEOS- Chem	2012–2017	Eastern China (105–122.5°E, 20–45°N)	1.18	0.08	/	/