

τ_1	$C_{n_{\tau_1}}$	$\overline{C_{rc}(\tau_1)}$	$\overline{C_{rc}(\tau_1)}_{C_{n_{\tau_1}}}$					
τ_2	$C_{n_{\tau_2}}$	$\overline{C_{rc}(\tau_2)}$	$\overline{C_{rc}(\tau_2)}_{C_{n_{\tau_2}}}$	$\overline{C_{rc}(\tau_2)}_{C_{n_{\tau_1}}}$				
τ_3	$C_{n_{\tau_3}}$	$\overline{C_{rc}(\tau_3)}$	$\overline{C_{rc}(\tau_3)}_{C_{n_{\tau_3}}}$	$\overline{C_{rc}(\tau_3)}_{C_{n_{\tau_2}}}$	$\overline{C_{rc}(\tau_3)}_{C_{n_{\tau_1}}}$			
\vdots	\vdots	\vdots	\vdots	\vdots	\vdots	\ddots		
τ_m	$C_{n_{\tau_m}}$	$\overline{C_{rc}(\tau_m)}$	$\overline{C_{rc}(\tau_m)}_{C_{n_{\tau_m}}}$	$\overline{C_{rc}(\tau_m)}_{C_{n_{\tau(m-1)}}}$	$\overline{C_{rc}(\tau_m)}_{C_{n_{\tau(m-2)}}}$...	$\overline{C_{rc}(\tau_m)}_{C_{n_{\tau_1}}}$	
\vdots	\vdots	\vdots	\vdots	\vdots	\vdots
τ_k	$C_{n_{\tau_k}}$	$\overline{C_{rc}(\tau_k)}$	$\overline{C_{rc}(\tau_k)}_{C_{n_{\tau_k}}}$	$\overline{C_{rc}(\tau_k)}_{C_{n_{\tau(k-1)}}}$	$\overline{C_{rc}(\tau_k)}_{C_{n_{\tau(k-2)}}}$

Supplement 3

Supplement Table S2 shows hourly and staged average contribution of straw open burning sources during PE II and PE III.

Table S2. Hourly and staged average contribution of straw open burning sources during PE II and PE III.

PE	Stage	Time (yyyy-mm-dd hh)	Hourly average			Staged average		
			Urban PM _{2.5} concentration	Contribution of straw open burning	Proportion of contribution of straw open burning	Urban PM _{2.5} concentration	Contribution of straw open burning	Proportion of contribution of straw open burning
PE II	Before	2021-04-07 17	44	0.0046	0.010%	55	0.15	0.27%
		2021-04-07 18	51	0.031	0.060%			
	During- 1st PS	2021-04-07 19	70	0.41	0.59%	233	116	50%
		2021-04-07 20	125	35	28%			
		2021-04-07 21	386	189	49%			
		2021-04-07 22	363	191	53%			
		2021-04-07 23	232	157	67%			
		2021-04-08 00	162	59	37%			
		2021-04-08 01	128	67	52%			
		2021-04-08 02	122	11	8.9%			
	During- 2nd PS	2021-04-08 03	318	57	18%	356	35	9.8%
		2021-04-08 04	598	82	14%			
		2021-04-08 05	488	25	5.2%			
		2021-04-08 06	252	0	0%			
After	2021-04-08 07	54	0	0%	38	0	0%	
	2021-04-08 08	21	0	0%				
PE III	Before	2021-04-08 14	29	0.090	0.31%	50	0.21	0.41%
		2021-04-08 15	48	0.11	0.23%			
		2021-04-08 16	55	0.14	0.26%			
		2021-04-08 17	58	0.33	0.58%			
		2021-04-08 18	61	0.36	0.58%			
	During- 1st PS	2021-04-08 19	88	0.38	0.43%	158	59	38%
		2021-04-08 20	115	2.4	2.1%			
		2021-04-08 21	136	6.1	4.5%			
		2021-04-08 22	129	19	15%			
		2021-04-08 23	124	24	20%			
		2021-04-09 00	128	33	26%			
		2021-04-09 01	132	62	47%			
		2021-04-09 02	150	67	45%			
		2021-04-09 03	161	75	47%			
		2021-04-09 04	175	111	64%			
	During- 2nd PS	2021-04-09 05	189	122	65%	117	9.4	8.0%
		2021-04-09 06	213	136	64%			
		2021-04-09 07	244	145	59%			
		2021-04-09 08	251	84	34%			
		2021-04-09 09	193	49	26%			
2021-04-09 10		142	49	35%				
During- 2nd PS	2021-04-09 11	116	24	21%	117	9.4	8.0%	
	2021-04-09 12	99	6.9	7.0%				
	2021-04-09 13	90	7.2	8.0%				
	2021-04-09 14	90	4.8	5.3%				
	2021-04-09 15	89	0.33	0.37%				
	2021-04-09 16	86	0.33	0.38%				

	2021-04-09	17	88	0.33	0.38%			
	2021-04-09	18	83	0	0%			
	2021-04-09	19	80	0	0%			
	2021-04-09	20	103	0	0%			
	2021-04-09	21	121	0	0%			
	2021-04-09	22	138	14	10%			
	2021-04-09	23	149	59	40%			
	2021-04-10	00	177	58	33%			
	2021-04-10	01	192	43	23%			
	2021-04-10	02	183	0.00	0%			
	2021-04-10	03	160	2.9	1.8%			
	2021-04-10	04	131	2.9	2.2%			
	2021-04-10	05	111	2.7	2.4%			
	2021-04-10	06	104	2.6	2.5%			
	2021-04-10	07	103	0.00	0%			
	2021-04-10	08	96	0.00	0%			
	2021-04-10	09	96	0.00	0%			
After	2021-04-10	10	75	0.00	0%	70	0	0%
	2021-04-10	11	64	0.00	0%			
