Supporting Information for:

A New Prediction Method of Industrial Atmospheric Pollutant Emission Intensity Based on Pollutant Emission Standard Quantification

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| Standard name (Code)                                                                 | Regulations                     | Emission limits | QRPES |
|------------------------------------------------------------------------------------|---------------------------------|-----------------|-------|
| Emission standard of pollutants for coking chemical industry (GB 16171-2012)      |                                 | PM  | SO₂  | NOₓ  |    |
|                                     [Machine coke, semi coke oven]                                                   |                                 | 30  | 50   | 500  | 1   |
|                                     [Heat recovery coke oven]                                                          |                                 | 30  | 100  | 200  | 1.33|
|                                     [Special emission standards for air pollutants]                                 |                                 | 15  | 30   | 150  | 0.47|
| Local standards of Hebei Province - Ultra-low emission standard of atmospheric     |                                 |     |      |      |     |
| pollutants for coking chemical industry (DB13/2863-2018)                          |                                 | 10  | 30   | 130  | 0.40|
| Steel, coking, cement whole process flue gas standard treatment work plan (TangHuanQi (2019) number 3) | [Tangshan city]                  | 10  | 15   | 100  | 0.28|
| Local standards of Shandong Province - Regional and Integrated Emission Standard of |                                 |     |      |      |     |
| Air Pollutants (DB37/2376-2019)                                                   | [Key control area]              | 10  | 30   | 100  | 0.37|
|                                     [General control area]                                                        |                                 | 10  | 30   | 150  | 0.41|
| Emission Standard of Air Pollutants for Thermal Power Plants in Shandong Province | [Coal - fired (coal water slurry) boilers]                                       | 20  | 100  | 100  | 0.96|
| (DB37/664-2013)                                                                   |                                 |     |      |      |     |
| Local standards of Heinan Province-emission standard of atmospheric pollutants for |                                 |     |      |      |     |
| coking chemical industry (DB41/ 1955-2020)                                        |                                 | 10  | 30   | 100  | 0.37|
| Local standards of Shanxi Province - Emission standard of air pollutants for boilers | [Northern shaanxi, southern Shaanxi region]                                       | 10  | 50   | 100  | 0.51|
| (DB61/1226-2018)                                                                  |                                 |     |      |      |     |
| Emission standard of air pollutants for boilers (GB13271-2014)                    | [New Gas Boiler]                 | 20  | 50   | 200  | 0.69|
|                                     [In-use gas boiler]                                                        |                                 | 30  | 100  | 400  | 1.27|
| Emission standard of air pollutants for thermal power plants (GB 13223-2011)      | [Gas-fuel or gas turbine units - Other gas fired gas turbine units]                | 10  | 100  | 120  | 0.86|
|                                     [Gas-fueled boilers or gas turbine units - other gas fuel boilers]            |                                 | 10  | 100  | 200  | 0.91|
|                                     [Oil-fired boiler or gas turbine unit-new boiler]                            |                                 | 30  | 100  | 100  | 1.07|
| Standard name (Code)                                                                 | Regulations                                                                 | Emission limits | QRPES |
|-----------------------------------------------------------------------------------|----------------------------------------------------------------------------|-----------------|-------|
| Integrated emission standard of air pollutants (GB16297-1996)                     | Emission Limits of Air Pollutants from New Sources of Pollution             | 120             | 240   | 550   | 3.3   |
| Province   | City                        | Emission limits | QRPES |
|------------|-----------------------------|-----------------|-------|
|            |                             | PM  | SO₂  | NOₓ  |     |
| Hebei      | Tangshan                    | 10  | 15   | 100  | 0.28|
|            | Handan, Qinhuangdao, Xingtai,|     |      |      |     |
|            | Shijiazhuang, Baoding       | 15  | 30   | 150  | 0.47|
|            | Taiyuan, Changzhi, Jincheng,|     |      |      |     |
|            | Shijiazhuang, Baoding       | 15  | 30   | 150  | 0.47|
| Shanxi     | Taiyuan, Changzhi, Jincheng,|     |      |      |     |
|            | Taiyuan, Changzhi, Jincheng,|     |      |      |     |
|            | Linyi, Liaoao, Liaoao,      |     |      |      |     |
| Shandong   | Heze, Jinfo, Linfo, Liaoao, | 10  | 30   | 100  | 0.38|
|            | Rizhao, Taiam, Weifang,     |     |      |      |     |
| Inner Mongolia | Shenyang, Benxi, Dandong, | 30  | 50   | 500  | 1    |
| Liaoning   | Shenyang, Benxi, Dandong,   | 30  | 50   | 500  | 1    |
| Heilongjiang | Qitaib, Hegang, Shuangyashan, | 30  | 50   | 500  | 1    |
| Henan      | Pingdingshan, Anyang, Xuchang,|     |      |      |     |
| Anhui      | Nanyang                     | 10  | 30   | 100  | 0.38|
| Fujian     | Fuzhou, Fuxin               | 15  | 30   | 100  | 0.47|
| Gansu      | Lanzhou                     | 15  | 30   | 100  | 0.47|
| Guangdong  | Zhanjiang                   | 10  | 100  | 200  | 0.91|
| Guangxi    | Guilin                      | 30  | 50   | 500  | 1   |
| Guizhou    | Liupanshi, Zunyi, Bijie,    | 30  | 50   | 500  | 1   |
| Hubei      | Wuhan, Huangshi, Ezhou      | 30  | 50   | 500  | 1   |
| Province | City | Emission limits | QRPE S |
|----------|------|-----------------|--------|
|          |      | PM | SO₂ | NOₓ |      |
| Hunan    | Loudi, Chenzhou, Xiangtan, Shaoyang | 30 | 50 | 500 | 1    |
| Jilin    | Tonghua, Jilin | 30 | 50 | 500 | 1    |
| Jiangsu  | Xuzhou, Yancheng, Nanjing, Huaian | 15 | 30 | 150 | 0.47 |
|          | Zhenjiang | 30 | 50 | 500 | 1    |
| Jiangxi  | Jingdezhen, Pingxiang, Xinyu, Yichun | 30 | 50 | 500 | 1    |
|          | Fuzhou | 50 | 100 | 200 | 1.36 |
| Ningxia  | Shizuishan, Yinchuan, Wuzhong | 15 | 30 | 150 | 0.47 |
|          | Zhongwei | 30 | 50 | 500 | 1    |
| Qinghai  | Xining, Haixi | 30 | 50 | 500 | 1    |
| Shanghai | | 20 | 100 | 200 | 1.02 |
| Sichuan  | Leshan | 15 | 30 | 150 | 0.47 |
|          | Panzhihua, Guangyuan, Neijiang, Dazhou, Liangshan | 30 | 50 | 500 | 1    |
| Tianjin  | | 15 | 30 | 150 | 0.47 |
| Xinjiang | Yili, Tulufan, Tacheng, Jichang, Akesu | 30 | 50 | 500 | 1    |
| Yunnan   | Kunming, Qujing, Honghe, Yuxi, Chuxiong | 30 | 50 | 500 | 1    |
| Zhejiang | Ningbo, Huzhou | 15 | 30 | 150 | 0.47 |
| Chongqing | | 15 | 30 | 150 | 0.47 |