The 2013-2014 Pollution Information Transparency Index (PITI)

Fifth Annual Assessment of Environmental Transparency in 120 Chinese Cities

Breakthroughs
&
Beginnings

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Executive Summary

Since 2009, the Institute for Public & Environmental Affairs (IPE) and the Natural Resources Defense Council (NRDC) have assessed pollution-source information disclosure in 113 Chinese cities. During the previous four assessments, pollution-source monitoring information disclosure in these 113 cities has steadily improved, but the rate of improvement has slowed, with most cities having reached a bottleneck in the disclosure of key information such as routine supervision records, enterprise emissions data, and environmental impact assessment (EIA) documents.

IPE and NRDC recommended in the PITI report released in 2013 that in the face of China's severe air, water, and soil pollution, China urgently needs to implement a comprehensive system of pollution-source information disclosure. On March 28, 2013, 26 social organizations in China jointly called for the comprehensive disclosure of pollution-source information, including the disclosure of real-time, online monitoring data of key polluting enterprises and the full text of EIA reports.

In light of the demand for comprehensive disclosure of pollution-source information, IPE and NRDC began revisions of the PITI indicators that had been used for the past four assessments, forming a new standard for the PITI assessment. Although this standard is still based on China's pollution-source monitoring and information disclosure system, the indicator criteria have been significantly upgraded, with most indicators now in line with international standards—and the indicator regarding the real-time disclosure of pollution-source information already at the forefront of international practice.

In addition, since the recommendations were issued, a number of social organizations and government departments have cooperated to make positive progress with respect to comprehensive pollution-source information disclosure. The Ministry of Environmental Protection (MEP) now requires the real-time disclosure of online pollution-source monitoring data; subsequently, various provinces successively established platforms for information disclosure, some of which have already achieved real-time disclosure of pollution-source information. In addition, the requirement that the full text of EIA reports be disclosed has been established by law.

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Taking into account the rapid progress made in environmental information disclosure legislation and practice, in the fifth annual assessment of 120 cities, IPE and NRDC established that the assessment period for the disclosure of real-time online monitoring should include data from 2013 until May 2014[1], and that the assessment period for the disclosure of EIA documents should include data from 2013 until March 10th, 2014. Given that the new indicators have been significantly upgraded, most cities' scores decreased considerably in this assessment. However, the fact that for the first time Chinese cities' pollution-source information disclosure has been assessed according to international standards shows the progress China has made in environmental information disclosure.

The 2013 assessment highlights four major areas of progress: the online monitoring platforms for Shandong, Zhejiang, and several other provinces have essentially already realized disclosure on an hourly basis; Ningbo, Beijing, and several other key cities have begun to publish routine supervision information in a systematic fashion; Beijing, Tianjin, Yancheng, and 42 other cities have started to disclose the full text of EIA reports; and the Environmental Protection Bureaus (EPBs) of Shandong, Hunan, and several other cities have begun using Weibo (a popular Chinese microblog) and other similar social media tools to interact with the public.

This assessment also revealed deficiencies with environmental information disclosure, of which two are especially prominent: 1) public participation in EIAs is difficult to implement, resulting in a lack of informed public participation in environmental decision-making; and 2) the disclosure of enterprise emissions data is rare. These challenges not only cause most cities to have low levels of pollution information disclosure, but have also decreased communities' trust in enterprises, sometimes even to the point of inciting mass incidents.

The newly amended Environmental Protection Law, approved on April 24, 2014, includes a special chapter on information disclosure and public participation, reflecting a universal acknowledgement of the fundamental role of environmental information disclosure. In light of the new regulatory requirements and international practices for information disclosure, this assessment intends to establish a new baseline for environmental information disclosure in China, while simultaneously anticipating that these new standards will become a starting point for future advances in information disclosure.

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[1] Henan's score was based on data from up until June 3, 2014

Chapter 1

Revisions to Evaluation Standards and Scope

Revision of Standards

Following the enactment of the Methods of Environmental Information Disclosure (Trial) on May 1, 2008, which for the first time provided more systematic requirements for government and enterprise environmental disclosure, IPE and NRDC developed the PITI index and have conducted annual assessments for the past four years.

In the annual assessment published in 2013, IPE and NRDC recommended that, in the face of China's severe pollution, the country should implement a comprehensive system of pollution-source supervisory information disclosure. IPE and NRDC held expert consultation workshops in Beijing and Xi'an to seek comments for revisions to the PITI assessment indicators.

The first expert consultation workshop was held in Xi'an on July 27, 2013. Participants, who included Wang Canfa (China University of Political Science and Law, henceforth CUPL), Yang Sujuan (CUPL), Hou Jiaru (CUPL), Li Yanfang (Renmin University), Zheng Shaohua (Shanghai University of Finance and Economics), Yang Pingjian (Center for Environmental Education & Communications, MEP), and officials from the EPBs of Xi'an, Jiaxing, Hebei, Hefei, Ningbo, and Shenzhen, provided many important comments and recommendations.

The second expert consultation workshop, held on October 28, 2013, also yielded important feedback and recommendations. Participants included Wang Jin (Peking University), Wang Canfa (CUPL), Hu Jing (CUPL), and Zhu Xiao (Renmin University).

At the same time, significant progress has been made in national legislation on environmental information disclosure. MEP released the Catalogue of Disclosure of Pollution-Source Environmental Supervisory Information (Volume 1), the Methods for Key State-Monitored Enterprise Pollution-Source Self-Monitoring and Information Disclosure (Trial), the Methods for Key State-Monitored Enterprise Pollution-Source Supervisory Monitoring and Information Disclosure, the Guide to Governmental Information Disclosure of Environmental Impact Assessments for Construction Projects (Trial)[2], and the Environmental Protection Law of the PRC, which was amended by the NPC on April 24, 2014. In

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[2] See Appendix 2

accordance with the newly published environmental laws and regulations, IPE and NRDC have taken additional steps toward amending their assessment standards.

Following the two consultation workshops, IPE and NRDC further revised and finalized the assessment standards to incorporate the experts' comments and recommendations.

The eight main evaluation areas and their assigned weights for the original PITI are described in the figure below.

Figure 1.1: Original PITI Assessment (by Area)

28 pts	Publication of Routine Pollution-Source Supervisory Information
8 pts	Publication of Information on Pollution-Source Enforcement Campaigns
8 pts	Publication of Cleaner Production Audit Information
8 pts	Publication of Information on the Overall Enterprise Environmental Performance Assessment
18 pts	Publication of Information on Verification of Petitions and Complaints
8 pts	Publication of Information on EIA Document Acceptance and Approval
4 pts	Publication of Information on Emissions Fees
18 pts	Disclosure upon Application

The revised assessment areas for the 2014 PITI are as follows:

Figure 1.2: Revised PITI Assessment (Areas and Weights)

Comparing the older versions of the PITI standards with the 2014 amended assessment areas and

Environmental Supervisory Information (50 points)	Publication of Excessive Emissions and Other Violation Records (23 points)
	Enterprise Environmental Performance Assessment (5 points)
	Publication of Emissions Fees (2 points)
	Disclosure of Online Monitoring Information (20 points)
Interaction and Response (15 points)	Petitions and Complaints (7 points)
	Disclosure upon Application (8 points)
Enterprise Emissions Data (20 points)	Disclosure of Key Enterprise Emissions Statistics (16 points)
	Publication of Clean Production Audit Information (4 points)
EIA Information (15 points)	

indicators yielded the following primary changes to the assessment:

Figure 1.3: Content of Revised PITI Indicators

Revision Category	Revised Area	Reason for Revisions	Primary Indicators
Added Areas	Real-time disclosure of online monitoring information	Real-time disclosure has great strategic importance for strengthening environmental enforcement and ensuring the public's right to information, participation, and supervision	The status of each provincial EPB's development of a self-monitoring platform; the content of enterprises' self-monitoring publications and the amount of data published
	Enterprise annual emissions data disclosure	International experience shows that establishing a pollutant release and transfer registration system under public supervision is a strong incentive for enterprises to reduce emissions	Completeness of enterprises' annual emissions publications, the number of pollutants included, the transfer and disposal of hazardous waste, etc.; the timing and amount of enterprises' annual emissions data publication
Revised Areas	Disclosure of EIA information	Practical experience indicates that, in the absence of information disclosure and public participation, EIAs cannot effectively control pollution and minimize harm	Disclosure of the full text of EIA reports; methods for using the media, community assemblies, public hearings, etc., to gather public opinion before approving an EIA and inform stakeholders of their right to administrative review or administrative litigation
Deleted Areas	Disclosure of information on enforcement campaigns	One-off environmental enforcement campaigns can control pollution for a short period of time; however, the impact is not sustainable. Pollution control should rely on strengthening routine monitoring and information disclosure. Excessive emissions and other violation information which was under the "centralized regulation" area is now integrated into the "supervision information" area in the new standard	EPBs' disclosure of information on pollution-source enforcement activity in specific industries, areas, or subjects

For the 2013-2014 annual PITI assessment standards, refer to Appendix 1.

Adjustment of Evaluation Scope

Based on the revisions to the list of key cities for environmental protection designated by the Twelfth Five-Year Plan, this PITI assessment added Zhenjiang, Sanmenxia, Zigong, Deyang, Nanchong, Yuxi, and Weinan to the list of evaluated cities.

Figure 1.4 Geographic Distribution of Cities Evaluated in the PITI

Green Anhui, Shandong Green Qilu, Green Hunan, and other environmental organizations used the PITI indicators to carry out assessments for some cities in their respective provinces, covering 29 cities in all. For the scores of the cities, see Appendix 3; for the list of cities, see Figure 1.5.

Figure 1.5 Cities Evaluated by Local Environmental Organizations

Province	Cities Evaluated
Shandong	Dongying, Weihai, Heze, Liaocheng, Laiwu, Dezhou, Linyi, Binzhou
Anhui	Xuancheng, Tongling, Chizhou, Chuzhou, Bengbu, Bozhou, Suzhou, Fuyang, Huaibei, Lu'an, Anqing, Huainan, Huangshan
Hunan	Hunan, Hengyang, Chenzhou, Yongzhou, Yiyang, Shaoyang, Huaihua, Loudi

In addition, Green Home of Fujian conducted assessments for 3 cities and Nanjing Green Stone completed Jiangsu's "disclosure upon application" assessment portion.

Chapter **2**

Assessment Results and Analysis

2013-2014 Assessment Results for 120 Cities

Figure 1: 2013-2014 PITI Results and Rankings for 120 Cities

Rank	City	Score	Rank	City	Score	Rank	City	Score
1	Ningbo	65.9	41	Rizhao	32	81	Xianyang	23
2	Beijing	58.7	42	Shijiazhuang	31.9	82	Chifeng	22.5
3	Qingdao	55.8	43	Jiaozuo	31.3	83	Yueyang	22.5
4	Zhenjiang	55.3	44	Weihai	31.2	84	Changde	22.4
5	Wenzhou	53.2	45	Shenyang	31	85	Fushun	21.6
6	Hangzhou	53.1	46	Zhengzhou	30.9	86	Karamay	21.4
7	Shanghai	53	47	Dalian	30.8	87	Pingdingshan	21.2
8	Nanjing	50.9	48	Handan	30.7	88	Guiyang	21.2
9	Changzhou	47.6	49	Zunyi	30.6	89	Xining	21.1
10	Yangzhou	43.7	50	Jining	30.6	90	Yibin	20.5
11	Taizhou	43.4	51	Dongguan	30.3	91	Shizuishan	20.2
12	Ma'anshan	42.9	52	Xiangtan	30	92	Daqing	20.1
13	Yantai	42.8	53	Xi'an	29.2	93	Qinhuangdao	20
14	Suzhou	42.5	54	Baoji	28.2	94	Qiqihar	19.6
15	Wuxi	42.1	55	Liuzhou	28.1	95	Chongqing	18.8
16	Fuzhou	41.8	56	Erdos	28.1	96	Luoyang	18.6
17	Lianyungang	39.6	57	Yinchuan	27.9	97	Tongchuan	18.6
18	Hefei	38.9	58	Yichang	27.9	98	Benxi	18.2
19	Wuhu	38.7	59	Jiujiang	27.6	99	Zigong	18.1
20	Weifang	38.4	60	Baotou	26.8	100	Panzhihua	17.7
21	Tianjin	38.3	61	Nanning	26.7	101	Mudanjiang	17.2
22	Shaoxing	38.3	62	Foshan	26.4	102	Anshan	17.2
23	Jiaxing	38	63	Luzhou	26.1	103	Shantou	16.4
24	Jinan	37.9	64	Kaifeng	25.4	104	Changchun	15.8
25	Chengdu	37.9	65	Mianyang	25.3	105	Anyang	15.6

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Rank	City	Value	Rank	City	Value	Rank	City	Value
26	Xiamen	37.7	66	Baoding	25.3	106	Qujing	15.3
27	Quanzhou	37	67	Changsha	25	107	Jinchang	15.3
28	Tai'an	36.8	68	Jingzhou	24.6	108	Lanzhou	15.2
29	Nantong	36.8	69	Zhanjiang	24.5	109	Nanchong	14.6
30	Xuzhou	36.2	70	Guilin	24.5	110	Zhangjiajie	14.2
31	Shenzhen	35.4	71	Sanmenxia	24	111	Kunming	13.8
32	Wuhan	34.9	72	Changzhi	23.8	112	Linfen	13.6
33	Zaozhuang	34.8	73	Zhuhai	23.7	113	Harbin	13.5
34	Yancheng	34.2	74	Beihai	23.6	114	Jinzhou	13.2
35	Zibo	34.1	75	Weinan	23.4	115	Deyang	13
36	Guangzhou	34	76	Taiyuan	23.4	116	Shaoguan	12.2
37	Zhongshan	33.8	77	Urumqi	23.4	117	Jilin	11.3
38	Tangshan	32.5	78	Hohhot	23.2	118	Yuxi	9
39	Nanchang	32.3	79	Yan'an	23.2	119	Yangquan	8.4
40	Huzhou	32	80	Zhuzhou	23	120	Datong	8.3

Figure 2.2 2013-2014 PITI Assessment Results for 120 Cities

Rank	City	Total	Supervision records (50 points)				Responsiveness (15 points)		Enterprise emissions data (20 points)		EIAs (15 pts)
			Violations (23)	Enterprise environmental performance (5 pts)	Emissions fees (2 pts)	Self-monitoring data (20 pts)	Petitions and complaints (7 pts)	Disclosure upon application (8 points)	Key enterprise emissions data (16 pts)	Clean production audits (4 pts)	
1	Ningbo	65.9	18.4	3.6	1.9	18	6.6	6.8	3.2	1.4	6
2	Beijing	58.7	21.4	1	1.7	7	6.4	8	3.2	1.4	8.6
3	Qingdao	55.8	18.4	0	1.6	19	6.4	6	3.2	1.2	0
4	Zhenjiang	55.3	18.4	2.4	1.7	17	6.6	1	0.8	1.4	6
5	Wenzhou	53.2	18.2	4.6	0	18	4.8	1.2	0	1.4	5
6	Hangzhou	53.1	11.4	4	1.5	18	6.6	6.8	0	1.4	3.4
7	Shanghai	53	13.6	1	1.6	17	6.2	7.2	0	1.4	5
8	Nanjing	50.9	11.6	4.6	1.7	14	6.2	6.6	0.8	1.4	4
9	Changzhou	47.6	12	4.4	1.6	4	6.4	8	6.8	1.4	3
10	Yangzhou	43.7	11.4	1	1.7	11	6.4	6	0.8	1.4	4
11	Taizhou	43.4	7.6	3	0	18	3.8	6.6	0	1.4	3
12	Ma'anshan	42.9	4.6	1	1.3	18	6.6	5	0	1.4	5
13	Yantai	42.8	4.6	0	1.6	19	6.8	6	0	1.8	3
14	Suzhou	42.5	7.6	2.8	1.7	11	6.6	6	4.4	1.4	1
15	Wuxi	42.1	13.6	4.4	1.1	11	3.8	6	0.8	1.4	0
16	Fuzhou	41.8	9.2	0	1	16	6.8	4.4	0	1.4	3
17	Lianyungang	39.6	9.2	3.6	1.6	4	6.4	6.6	0.8	1.4	6
18	Hefei	38.9	4.6	0	1.7	18	6.6	6.8	0	1.2	0
19	Wuhu	38.7	4.6	0	0.7	16	6.2	6.6	3.2	1.4	0

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20	Weifang	38.4	4.6	0	0	19	5.6	4.8	3.2	1.2	0
21	Tianjin	38.3	4.6	1	1.3	4	6.6	5.2	7.6	1.4	6.6
22	Shaoxing	38.3	4.6	3.6	1.9	18	6.4	1.4	0	1.4	1
23	Jiaxing	38	8.4	2.8	1.4	18	3.6	1.4	0	1.4	1
24	Jinan	37.9	4.6	0	1.5	19	6	4.4	0	1.4	1
25	Chengdu	37.9	13.6	0	1.7	4	6	5.2	0	1.4	6
26	Xiamen	37.7	4.6	0	1.5	16	5.6	3.8	4.8	1.4	0
27	Quanzhou	37	4.6	0	1	16	5	6	0	1.4	3
28	Tai'an	36.8	4.6	0	0	19	6.4	5.6	0	1.2	0
29	Nantong	36.8	9.2	2.4	1.6	8	1.4	6	0.8	1.4	6
30	Xuzhou	36.2	4.6	2	1	11	1.4	8	6.8	1.4	0
31	Shenzhen	35.4	16	2.6	1.4	1	2.8	5.2	0	1.4	5
32	Wuhan	34.9	10.6	0	1.3	8	6.6	6	0	1.4	1
33	Zaozhuang	34.8	4.6	0	0	19	2.6	1.8	5.6	1.2	0
34	Yancheng	34.2	9	2.4	0	1	4.2	5.2	4.4	1.4	6.6
35	Zibo	34.1	4.6	0	1.3	19	2.8	5.2	0	1.2	0
36	Guangzhou	34	18.2	2.8	1.6	1	6.4	1.8	0	1.2	1
37	Zhongshan	33.8	15.8	1	1.2	1	6.4	6	0	1.4	1
38	Tangshan	32.5	4.6	0	1.3	13	6.4	4.8	0	1.4	1
39	Nanchang	32.3	4.6	0	1.7	17	1.4	5.2	0	1.4	1
40	Huzhou	32	4.6	0	0	18	1.4	6.6	0	1.4	0
41	Rizhao	32	7.6	0	0	19	2.8	1.4	0	1.2	0
42	Shijiazhuang	31.9	4.6	0	1.7	11	6.4	5.8	0	1.4	1
43	Jiaozuo	31.3	4.6	0	1.5	14	6.4	3.6	0	1.2	0
44	Weihai	31.2	4.6	0	0	16	0.6	5.6	3.2	1.2	0
45	Shenyang	31	7.6	2.8	0	4	6	1	7.6	2	0
46	Zhengzhou	30.9	10.6	0	0.7	14	2.8	1.4	0	1.4	0
47	Dalian	30.8	4.6	0	0.4	4	6.2	6	3.2	1.4	5
48	Handan	30.7	4.6	0	1.3	11	5.6	0.8	0	1.4	6
49	Zunyi	30.6	16.8	0	1.6	4	6.4	0.8	0	0	1
50	Jining	30.6	4.6	0	0	19	3.8	1	0	1.2	1
51	Dongguan	30.3	9.2	1	1.5	1	6.4	6.4	0	1.4	3.4
52	Xiangtan	30	4.6	2.4	1	8	6.6	3.8	0	1.2	2.4
53	Xi'an	29.2	6.8	0	0	11	5.6	3.6	0	1.2	1
54	Baoji	28.2	4.6	0	0	11	6.2	4.2	0	1.2	1
55	Liuzhou	28.1	9.2	0	1.7	8	3.8	1	0	3.4	1
56	Erdos	28.1	4.6	0	1.5	8	1.4	2	4.4	1.2	5
57	Yinchuan	27.9	7.6	1	1.5	14	2.6	0	0	1.2	0
58	Yichang	27.9	4.6	0	1.7	8	6.8	4.4	0	1.4	1
59	Jiujiang	27.6	4.6	0	0.8	17	1.4	1.4	0	1.4	1
60	Baotou	26.8	4.6	0	0	8	0	7.6	5.6	0	1
61	Nanning	26.7	9.2	0	1.7	4	2.8	1	3.2	2.4	2.4
62	Foshan	26.4	11.4	2	1.4	1	5.2	1	0	1.4	3
63	Luzhou	26.1	8.4	0	1.5	4	1.4	4.4	0	1.4	5
64	Kaifeng	25.4	7.6	0	1.6	14	0	1	0	1.2	0
65	Mianyang	25.3	11.4	0	1.3	4	2.8	0.8	0	0	5
66	Baoding	25.3	4.6	0	1.1	11	1.4	5.8	0	1.4	0
67	Changsha	25	9	1.8	1.4	4	5.6	1	0	1.2	1
68	Jingzhou	24.6	4.6	0	2	8	6.4	1.2	0	1.4	1
69	Zhanjiang	24.5	4.6	1.8	0.7	1	6.4	4.8	0	1.2	4
70	Guilin	24.5	9.2	0	1.7	8	0	1	0	3.6	1

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71	Sanmenxia	24	4.8	0	1	14	2.8	0.2	0	1.2	0
72	Changzhi	23.8	4.6	0	1	0	6.4	5.4	0	1.4	5
73	Zhuhai	23.7	4.6	1	1.7	1	1.4	6.8	0	1.2	6
74	Beihai	23.6	4.6	0	0	4	5.6	5	0	1.4	3
75	Weinan	23.4	4.6	0	0	14	2.6	1	0	1.2	0
76	Taiyuan	23.4	10.6	0	1.4	0	6.4	4	0	0	1
77	Urumqi	23.4	9	0	1	8	2.4	0.8	0	1.2	1
78	Hohhot	23.2	4.6	0	0	8	1.4	0.6	3.2	1.2	4.2
79	Yan'an	23.2	4.6	0	0	14	1.4	1	0	1.2	1
80	Zhuzhou	23	4.6	1	1.6	4	4.2	1.4	0	1.2	5
81	Xianyang	23	4.6	0	0.4	11	1.4	4.4	0	1.2	0
82	Chifeng	22.5	4.6	0	0.7	8	2.8	1	4.4	0	1
83	Yueyang	22.5	7.6	1.8	1.7	4	4.8	1.4	0	1.2	0
84	Changde	22.4	7.6	1.8	0	4	1.4	1.4	0	1.2	5
85	Fushun	21.6	4.6	0	0	4	6.2	1.2	3.2	1.4	1
86	Karamay	21.4	1.4	0	0.6	14	4.2	0	0	1.2	0
87	Pingdingshan	21.2	6	0	0	11	2.8	0.2	0	1.2	0
88	Guiyang	21.2	6.2	0	1.4	4	3.4	1.2	0	0	5
89	Xining	21.1	7.6	0	1.9	1	5.4	4	0	1.2	0
90	Yibin	20.5	4.6	0	1.3	4	4.2	0	0	1.4	5
91	Shizuishan	20.2	4.6	0	0	14	0	0.4	0	1.2	0
92	Daqing	20.1	4.6	0	1.3	4	2.8	5	0	1.4	1
93	Qinhuangdao	20	4.6	0	1	11	1.4	0.6	0	1.4	0
94	Qiqihar	19.6	4.6	0	0	4	3	1.6	0	1.4	5
95	Chongqing	18.8	4.6	0	1.6	1	6.6	3.6	0	1.4	0
96	Luoyang	18.6	4.6	0	0	8	4.2	0.6	0	1.2	0
97	Tongchuan	18.6	4.6	0	0	11	1.4	0.4	0	1.2	0
98	Benxi	18.2	4.6	0	0	4	6.2	1	0	1.4	1
99	Zigong	18.1	8.4	0	0.9	4	1.4	0.4	0	0	3
100	Panzhihua	17.7	9.2	0	1.7	4	1.4	0	0	1.4	0
101	Mudanjiang	17.2	4.6	0	0	4	5.6	1.6	0	1.4	0
102	Anshan	17.2	4.6	0	0	4	6.2	1	0	1.4	0
103	Shantou	16.4	4.6	1	1.6	1	2.2	5	0	0	1
104	Changchun	15.8	4.6	0	0	1	3.8	4	0	1.4	1
105	Anyang	15.6	4.6	0	1.4	4	3.6	0.6	0	1.4	0
106	Qujing	15.3	4.6	0	0.9	1	0	6.4	0	1.4	1
107	Jinchang	15.3	4.6	0	1.7	1	1.4	5.4	0	1.2	0
108	Lanzhou	15.2	4.6	0	1	1	6.4	1	0	1.2	0
109	Nanchong	14.6	4.6	0	1	4	3.4	0.6	0	0	1
110	Zhangjiajie	14.2	8.2	0	1.4	1	1.4	1	0	1.2	0
111	Kunming	13.8	4.6	0	0	1	2.8	1	0	1.4	3
112	Linfen	13.6	4.6	0	1.6	0	5.6	0.8	0	0	1
113	Harbin	13.5	4.6	0	1.3	4	0	1.2	0	1.4	1
114	Jinzhou	13.2	4.6	0	0	1	6.2	0	0	1.4	0
115	Deyang	13	4.6	0	0	4	1.4	0	0	0	3
116	Shaoguan	12.2	4.6	2	0.8	1	2.8	0	0	0	1
117	Jilin	11.3	4.6	0	0.7	1	2.2	1.4	0	1.4	0
118	Yuxi	9	4.6	0	0.6	1	1.4	0	0	1.4	0
119	Yangquan	8.4	4.6	0	1.6	0	1.4	0.8	0	0	0
120	Datong	8.3	4.6	0	1.7	0	1.4	0.6	0	0	0

Breakdown of assessment scoring areas

By analyzing the scores of 120 cities across nine evaluation areas, we found that the publication of information on complaints and petitions and publication of emissions fees were the areas where cities were most likely to score points,[3] followed by self-monitoring information (42.7%[4]); on the other hand, the disclosure of emissions data from key enterprises and EIA information were the areas with the highest frequency of losing score points, with scoring rates of 12.7%[5] and 5%[6], respectively.

Figure 2.3 Scoring Rates for Each Evaluation Area

Average Scores vs. maximum Possible Score（%）

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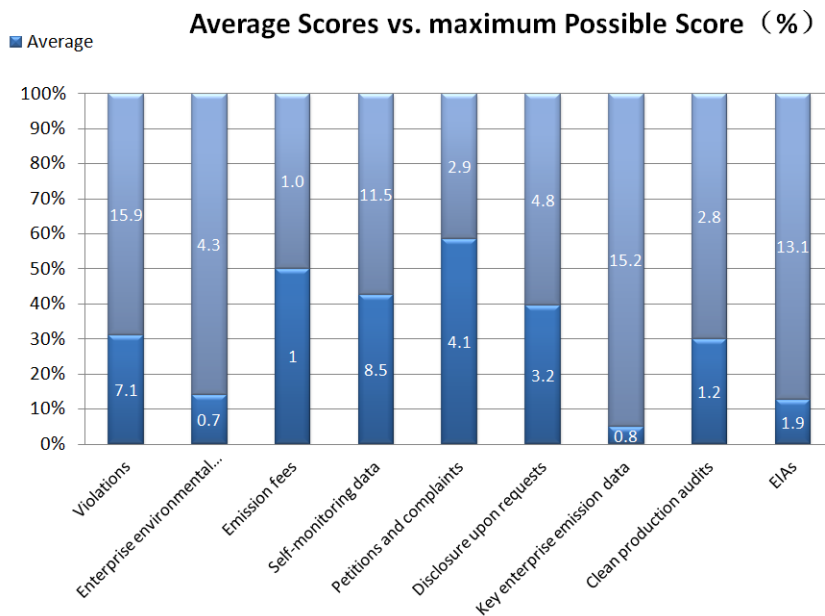
[3] Except for several cities including Guilin, Kaifeng, Harbin, Qujing, Shizuishan, Baotou, etc., from which we did not obtain complaints and petitions information for 2013, most evaluated cities have established platforms to publish information about complaints and petitions. EPBs in Shandong, Zhejiang, Hunan, and other provinces have also started to follow up public complaints through channels that are convenient for public participation, such as official Weibo accounts.

[4] For relevant analysis, see Section II.1: Major breakthroughs have been achieved in the disclosure of real-time monitoring data.

[5] For analysis of EIA information disclosure, see Section II.4: Informed public participation in environmental impact assessments still needs improvement.

[6] For analysis of emissions data, see Section II.3: A disclosure system for enterprise data is urgently needed.

Figure 2.4 Comparison of Average Annual Scores across Provinces

Comparison of Average Annual Scores Across Provinces
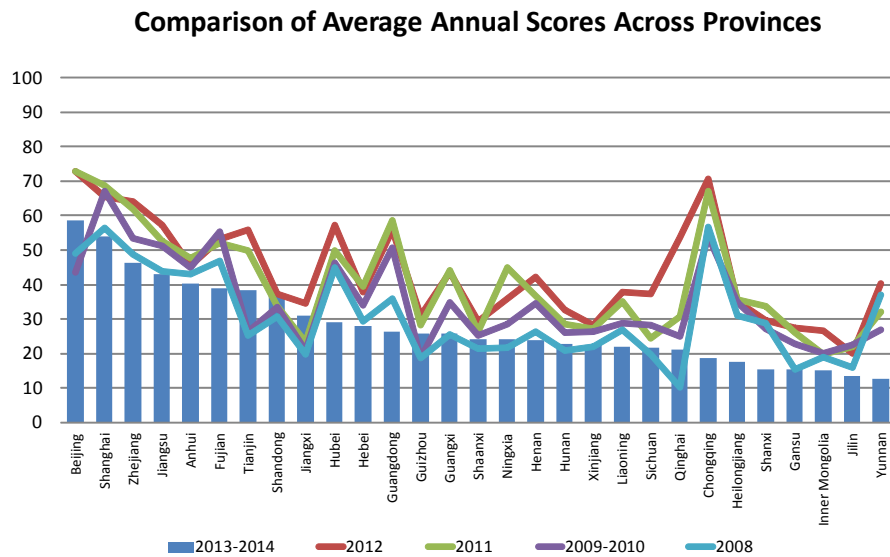
As can been seen from the above figure, the provinces with the most significant decrease in their PITI scores during this round's assessment were Chongqing, Guangdong, Hubei, Yunnan, and Qinghai.

Figure 2.5 Five Provinces with the Greatest Decrease in Overall Scor

Ranking of Five Provinces with the Greatest Decrease in Overall Score

	Chongqing	Yunnan	Qinghai	Hubei	Guangdong
Ranking PITI 2013-2014	23	29	22	10	12
Ranking PITI 2012	2	14	9	5	7
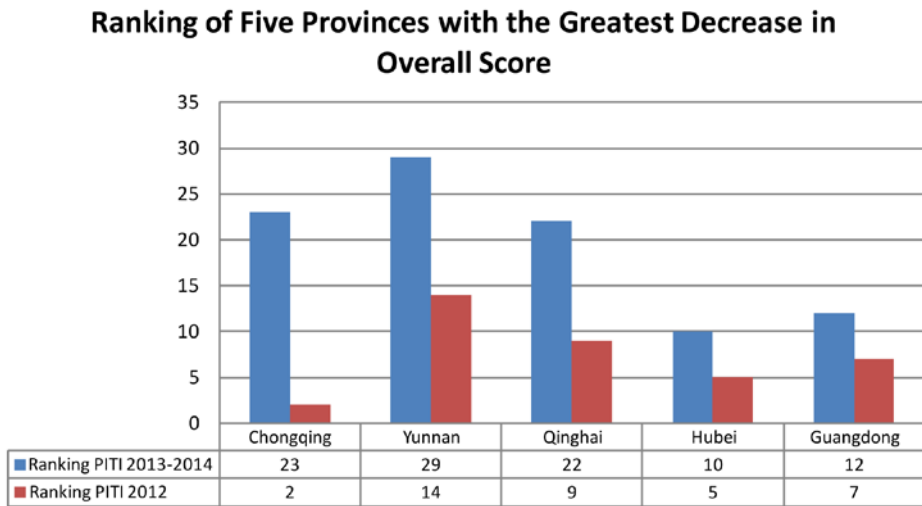
In analyzing the reasons for decreasing scores, one should note that the revised version of the assessment added three assessment areas in which performance was poor; namely, real-time disclosure of online monitoring information (20 points), disclosure of key enterprise emissions data (16 points), and disclosure of EIA information (15 points). Those three areas have a combined maximum of 51 points. For each of these areas, the performance of the five provinces suffering the greatest decrease in their overall score is as follows:

- For disclosure of key enterprises' annual pollutant emissions data, all five provinces received a score of 0;
- For disclosure of self-monitoring information, out of a maximum of 20 points, of the five provinces, only Hubei had cities scoring more than 1 point;
- For disclosure of EIA information, the only cities scoring more than 1 point were Kunming and certain cities in Guangdong.

2013-2014 Annual Assessment: Key Findings

1: Major breakthroughs have been achieved in the disclosure of real-time monitoring data

A major highlight of this assessment is that many regions have started to publish real-time, online monitoring data.

1.1 Origins of real-time disclosure

According to research from Yu Aimin of the Jilin Province Environmental Monitoring Center, China's online monitoring and early warning system originated in the 1990's. In 1999, the then-State Environmental Protection Administration (SEPA) approved Hainan and Jilin as Ecological Pilot Provinces. Later, the large industrial enterprises and sewage treatment plants in Guangdong, Jiangsu, Fujian, Shanghai, Zhejiang, and other relatively economically-developed provinces and cities established online monitoring systems for pollution-source information, mostly limited to online monitoring of wastewater. With regard to petroleum, industrial chemicals, municipal sewage treatment, papermaking, and synthetic fiber industries, monitoring projects focused on chemical oxygen demand (COD), pH, and the discharge rate. Individual enterprises added monitoring of oils, ammonia, total phosphorous, suspended solids (SS), and other specified pollutants.[7]

In September 2004, in order to improve the quality of its environmental management, China built a nationwide environmental monitoring network, creating a database with authority at the national level.[8] On July 7, 2005, SEPA published the Management Methods for Pollution-Source Automatic Monitoring,[9] which established standards for the development, operation, maintenance, and supervision of key pollution source self-monitoring systems.

However, even a considerable time after investing heavily in online monitoring systems, MEP and EPBs still limited information to internal use, to the point that oftentimes only a specific department of the local EPB could get hold of it. Because key pollution sources are often the beneficiaries of local protectionism, local intervention makes it difficult to effectively enforce the law—even when an EPB has real-time data on a violation.

[7] EYu Aimin, Yu Yang, Fan Hui, and Tai Chunning, "Preliminary Discussion on Major Problems with Online Monitoring and Early Warning System of Pollution Sources in China," Northern Environment, Vol. 22, No. 4 (August 2010). [this translation of the title and journal from CNKI: http://en.cnki.com.cn/Article_en/CJFDTOTAL-NMHB201004027.htm]

[8] Ibid.

[9] http://www.zhb.gov.cn/gkml/zj/jl/200910/t20091022_171832.htm

In order to satisfy the public right to information and ensure that these important data sources are used properly, on March 28, 2013, the SEE Foundation, the China Urban Realty Association, IPE, and 23 other entrepreneurial and environmental organizations launched the Comprehensive Pollution-Source Information Disclosure Initiative, which called for real-time publication of key pollution-source enterprises' online monitoring data.

The entrepreneurial and environmental organizations working together to promote this initiative received an enthusiastic official response, and within six months SEE's entrepreneurs and CPPCC members submitted two proposed bills; meanwhile, the environmental organizations began to successively meet with local governments in Beijing, Hebei, and other provinces to investigate real-time disclosure. On July 31, 2013, MEP promulgated the Methods for Key State-Monitored Enterprise Pollution-Source Self-Monitoring and Information Disclosure (Trial),[10] which required the real-time disclosure of key state-monitored pollution sources' online monitoring data.

1.2 Real-time data disclosure: Performance

Since 2013, Shandong, Zhejiang, Fujian, Anhui, Jiangsu, Shanghai, Jiangxi, and 16 other provinces/municipalities have successively established key monitored enterprises' self-monitoring information publishing platforms, thus commencing the real-time disclosure of enterprises' self-monitoring information. Through the collection and analysis of provincial-level platform data, we see that:

- Shandong, Zhejiang, Jiangxi, Fujian, Shanghai, and Anhui's platforms are operating well;[11]

- Ningxia, Shaanxi, Henan, Hebei, and Xinjiang's platform operations are passable;[12]

- However, the platforms of Jiangsu,[13] Inner Mongolia, Hubei, Beijing, Guangxi, Hunan, Tianjin, Heilongjiang, Sichuan, Guizhou, Liaoning, and Jilin still exhibit significant insufficiencies;[14]

- Guangdong, Chongqing, Yunnan, Gansu, Qinghai, and Shanxi still have not established real-time publication platforms for self-monitoring information, and have merely set up a special web column to publish summaries of the self-monitoring data.

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[10] http://www.zhb.gov.cn/gkml/hbb/bwj/201308/t20130801_256772.htm

[11] Scoring over 80% in that area.
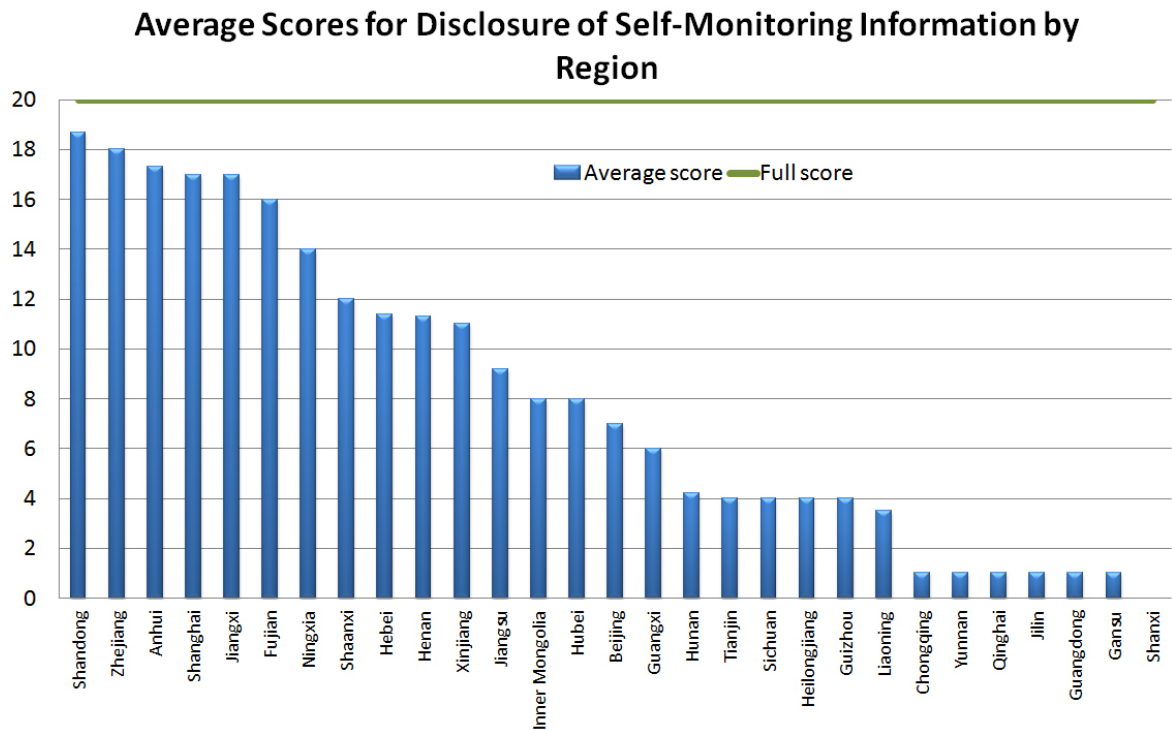
[12] Scoring between 50-80% in that area.

[13] The "Jiangsu Province National Key Monitoring Enterprise Self-Monitoring Information Publication Platform" was released after Jiangsu's assessment was completed; compared to the original platform, this platform's publication of key monitoring enterprises' real-time monitoring information is more systematic and timely.

[14] Scoring less than 50% in that area.

It should be stressed that the 120 cities' online monitoring real-time disclosure assessments are primarily based on the assessment of provincial platforms. First, we take into consideration that online monitoring data is held at the municipal level, so the aggregated provincial-level platform also reflects municipal-level contributions. Second, we believe that the requirement that each province develop an integrated platform, as included in MEP's Methods for Key State-Monitored Enterprise Pollution-Source Self-Monitoring and Information Disclosure (Trial), is a step in the right direction, since compared to the municipal platform, this kind of integrated platform supports data consistency and user-friendliness, and conveniently allows the public to access, use, and analyze information.

The provinces' average scores in the area of disclosure of self-monitoring information are shown in the following chart.

Figure 2.6: Average Scores for Disclosure of Self-Monitoring Information by Region

Province	Information Release Platform	Assessment Findings
Shandong	http://58.56.98.78:8801/webgis_wry/webgis/	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Shandong's platform exhibits the following characteristics: • Coverage is broad; the platform not only includes key state-monitored enterprises, but also many other important enterprises; • Low rate of deficiencies in the data; high data acquisition rate—the average acquisition rate for the nine cities evaluated was 79.86%, and the acquisition rate in Rizhao was 100%; • Platform is relatively complete; displays multiples of excess emissions and discharge quantity data for exhaust and wastewater emissions; • The platform's interface is relatively clear; data about excessive emitters is clearly presented in red, and there is a settings mode to view a graph of monthly trends, making it convenient for the public to search.
Zhejiang	http://app.zjepb.gov.cn:8089/nbjcsj/	Established a platform for real-time data release; systemically publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Zhejiang's platform exhibits the following characteristics: • Coverage is broad; the platform not only includes key state-monitored enterprises, but also many other important enterprises; • High data acquisition rate—of the seven evaluated cities in Zhejiang, the acquisition rate was 91.02%; • Platform demonstrates good completeness; includes information about smoke, wastewater, pollutant concentration, conversions for concentrations, and other information; furthermore, on its list of data, Zhejiang publicizes each monitoring indicator's corresponding standard limits and whether they were in excess, making it convenient for the public to be informed of whether each monitored enterprise exceeded standards; • The platform's configuration has an improved search function; the public can enter conditions to filter and search for information about each enterprise's "hourly average emissions," "daily average emissions," and "monthly average emissions"; in addition, one can also search for each enterprise's "warning emissions data," "abnormal emissions data," etc. The system has problems with browser compatibility.
Anhui	http://www.aepb.gov.cn/pages/Aepb12_WryCorp.aspx	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Anhui's platform exhibits the following characteristics: • Coverage is broad; the platform not only includes key state-monitored enterprises, but also many other important enterprises; • High data acquisition rate—of the three evaluated cities in Anhui, the acquisition rate was 73.66 %; • Platform demonstrates good completeness; published information includes wastewater and exhaust gas discharge volumes; it also has concentration data indicators for SO_2, NO_X, soot, PH, COD, ammonia, fluoride, and total phosphorus, and integrates data trends into a chart which shows whether each indicator was in excess; • Real-time monitoring data is integrated into a map display, making it convenient for the public to search surrounding enterprises' emissions.

Shanghai	http://202.136.217.188:8800/webpage!webPage.action#	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Shanghai's platform exhibits the following characteristics: • Coverage is broad; the platform not only includes key state-monitored enterprises, but also many other important enterprises; • High data acquisition rate—the acquisition rate for Shanghai was 87.68%; • Platform demonstrates good completeness; publishes information about each monitoring indicator's real-time monitoring concentration levels, as well as each indicator's corresponding standard limits and whether they were in excess; • Real-time monitoring data is integrated into a map display, making it convenient for the public to search surrounding enterprises' emissions.
Jiangxi	http://111.75.227.203:9180/eimppublish/home.jsp	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Jiangxi's platform exhibits the following characteristics: • Coverage is broad; the platform not only includes key state-monitored enterprises, but also many other important enterprises; • High data acquisition rate—of the two evaluated cities in Jiangxi, the acquisition rate was 84.86 %; • Completeness is insufficient; real-time monitoring data was not integrated into a display of emissions standards; information about standard limits was only published as part of the enterprises' self-monitoring plans, making it inconvenient for the public to know whether each enterprise's indictors were in excess. • Each key monitored enterprise's real-time monitoring information is integrated into a map display, making it convenient for the public to obtain information.
Fujian	http://218.66.59.96:8083/peams/zjcfb/index.jsp?token	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once every two hours for wastewater emissions and every hour for exhaust gas emissions. Fujian's platform exhibits the following characteristics: • Coverage is broad; the platform not only includes key state-monitored enterprises, but also many other important enterprises; • Data acquisition rate is high; of the three evaluated cities in Fujian, the average rate of acquisition was 88.55%; • Platform demonstrates good completeness; releases information about each monitoring indicator's real-time concentration levels, as well as each indicator's corresponding standard limits and whether each indicator was in excess; • Apart from releasing real-time monitoring data, Fujian's platform has a special online web column to publish enterprises' supervisory monitoring information reports or other information; • The platform also has deficiencies; on the day of the assessment, that day's real-time monitoring data only displayed the most recent data, and it was not possible to look up monitoring data that had already been released for the all of the time intervals on that day; one could only retrieve historical data from a certain date, and could not look up the data from different time periods in one day; • Fujian's environmental protection bureau website has a real-time monitoring platform, but a username and password is required to enter and search the home page. PITI's assessor used a link to Jinjiang's environmental protection bureau website to access the interface.

Breakthroughs & Beginnings

Henan	http://222.143.24.250:98/	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once every two hours for wastewater emissions and every hour for exhaust gas emissions. Henan's platform exhibits the following characteristics: • Platform demonstrates good completeness; releases information about each monitoring indicator's real-time concentration levels, as well as each indicator's corresponding standard limits and whether each indicator was in excess, making it convenient for the public to be informed of whether enterprises' emissions are in excess; • On the data list, data that is abnormal or exceeds standard limits is prominently displayed in bright yellow; supplemental data is displayed in bright green.
Shaanxi	http://113.140.66.227:8064/ province_publicity/jsp/ publicPage/index.jsp#	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Shaanxi's platform exhibits the following characteristics: • Mediocre data acquisition rate—of the six evaluated cities in Shaanxi, the average rate of acquisition was 54.4 %; • Demonstrates good completeness; releases information about each monitoring indicator's real-time concentration levels, as well as each indicator's corresponding standard limits and whether each indicator was in excess, making it convenient for the public to be informed of whether an enterprises' emissions are in excess; data updates are not timely—when logging in on May 19, 2014, many enterprises had not updated that day's monitoring data, and some enterprises had not updated their online monitoring information in a week.
Ningxia	http://222.75.161.242:9000/ xxgk/qyhjxxgk.html	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Ningxia's platform exhibits the following characteristics: • Mediocre data acquisition rate—of the two evaluated cities in Ningxia, the average acquisition rate was 62.43%; • Platform demonstrates good completeness; releases information about each monitoring indicator's real-time concentration levels, as well as each indicator's corresponding standard limits and whether each indicator was in excess, making it convenient for the public to be informed of whether enterprises' emissions are in excess. Moreover, Ningxia's platform also publishes information about each monitoring period's emissions quantities for COD, ammonia, and other monitoring indicators.

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Xinjiang	http://www.xjmic.com/enterprisemonitor/webpage!indexPage.action	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data at a frequency of every two hours for wastewater emissions and every hour for exhaust gas emissions. Xinjiang's platform exhibits the following characteristics: • Mediocre data acquisition rate—of the two evaluated cities in Xinjiang, the average acquisition rate was 47.05%; many key monitored enterprises did not release data in a timely manner or did not release monitoring data at all. When logging in to search the system on June 6, 2014, the home page displayed, "There are 271 key state-monitored enterprises in Xinjiang Autonomous Region; 249 have developed self-monitoring, of which there are 82 wastewater state-monitored enterprises, 19 of which disclosed information on this day; there are 152 exhaust state-monitored enterprises, 45 of which disclosed information on this day; there are 49 water treatment plants, of which 21 released information on this day"; • Platform demonstrates good completeness; releases information about each monitoring indicator's real-time concentration levels, as well as each indicator's corresponding standard limits and whether each indicator was in excess, making it convenient for the public to be informed of whether enterprises' emissions are in excess.
Hebei	http://110.249.223.91/hbhb/	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Hebei's platform exhibits the following characteristics: • Coverage is broad; the platform not only includes key state-monitored enterprises, but also many other important enterprises; • Mediocre data acquisition rate—of the five evaluated cities in Hebei, the acquisition rate was 50.06%; • Completeness is insufficient; indicators' monitoring data were not integrated into a display of standard limits, so there was no means of evaluating whether each monitored enterprise's wastewater and/or exhaust emissions were in excess; • The drop-down menus on the platform's homepage had problems; there were many enterprises whose monitoring data could not be found through a search of regional statistics; • The platform's "search conditions" setup had problems; the retrieval functions for historical statistics and types of data were not fully operational.
Jiangsu	http://222.190.123.51:8091/data/Web/AutoMonitor/AutoMonitorDataList.aspx	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once every two hours for wastewater emissions and every hour for exhaust gas emissions. Jiangsu's platform exhibits the following characteristics: • Of the ten evaluated cities in Jiangsu, apart from Zhenjiang, the data acquisition rate of the other cities was relatively low; the average acquisition rate was 31.21%; • Many key monitored enterprises published imprecise real-time monitoring information or even failed to publish any information at all; in particular, of 11 state-monitored exhaust-emitting enterprises in Yancheng, not one released real-time monitoring information; • However, after the assessment was completed, Jiangsu's environmental protection bureau published the "Jiangsu Province Key State-Monitored Enterprises' Automatic Monitoring Information Release Platform"; this platform releases systematic and timely monitoring information about key monitored enterprises to a greater extent than the previous platform.

Breakthroughs & Beginnings

Inner Mongolia	http://nmgepb.gov.cn:8088/enterprisemonitor/gisnavigation!citysuriverPage.action?regioncode=150100	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once every two hours for wastewater emissions and every hour for exhaust gas emissions. Inner Mongolia's platform exhibits the following characteristics: • Information release is not timely; the average data acquisition rate for four evaluated cities in Inner Mongolia was only 2.97%; • Platform demonstrates good completeness; releases information about each monitoring indicator's real-time concentration levels, as well as each indicator's corresponding standard limit values and whether each indicator was in excess, making it convenient for the public to be informed of whether enterprises' emissions are in excess. Moreover, on its real-time monitoring data list, Inner Mongolia also releases each enterprise's "emissions means" and "discharge destination"; for example, Shenhua Beidian Victory Energy Limited's discharges were displayed as "seeping into the ground or evaporating into the air from a pond."
Hubei	http://59.172.182.106/qyjc/jcjgXxOne.rh?xzqhdm=420100	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Hubei's platform exhibits the following characteristics: • Information release is not timely; according to data analysis, the average data acquisition rate for three evaluated cities in Hubei was 3.12%. At the time of the assessment, many enterprises had not released any real-time monitoring data; • Platform demonstrates good completeness; releases information about each monitoring indicator's real-time concentration levels, as well as each indicator's corresponding standard limits and whether each indicator was in excess, making it convenient for the public to be informed of whether enterprises' emissions are in excess; • Platform's search functions are not sufficiently user-friendly; each time a search was conducted, certain monitoring indicator information could only be looked up from a certain monitoring point.
Beijing	http://58.30.229.115/PublicGKDayDataWebSite/index.aspx	Established a special web column for the release of relevant data, which, on a daily basis, releases average pollutant concentrations for the previous day. However, each key monitored enterprise in Beijing established its own platform for real-time release of monitoring data; the Beijing Environmental Protection Bureau's website contains links to these platforms; they are also displayed in a corresponding special webpage.
Guangxi	http://www.gxepb.gov.cn/zxjc/pages/sjzs/index.jsp#	Established a platform for real-time data release; publishes key monitored enterprises' automatic monitoring data once an hour for wastewater and exhaust gas emissions. Guangxi's platform exhibits the following characteristics: • Platform's data release is not timely; according to data analysis, the average data acquisition rate of the four evaluated cities in Guangxi was 14.38%; • Platform releases information on a rolling basis, which is not a convenient means for the public to obtain information.

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Hunan	http://222.247.51.155:9000/ webpage!indexPage.action	Established a platform for real-time data release; publishes automatic monitoring data once every two hours for wastewater and every hour for exhaust gas. Hunan's platform exhibits the following characteristics: • Platform's data release in not timely; many enterprises have not recently released monitoring data. Furthermore, on the day of the assessment, of the two state-monitored enterprises being monitored for exhaust, Hunan Zhangjiajie Nanfang Cement Company Limited had not published any information since January 27, 2014, and Zhangjiajie Sangzi Power Plant Utility Company Limited had not published any information from January 1, 2014 onwards. According to data analysis, the average data acquisition rate from the six evaluated cities in Hunan was 11.57%. • Real-time monitoring information has been integrated into a map display, which makes it convenient for the public to learn about surrounding enterprises' emissions; • Platform demonstrates good completeness, publishes information about every monitoring indicator's real-time monitoring concentration level, as well as every indicator's corresponding standard limits and whether or not standards were met, which is a convenient way for the public to obtain information.
Tianjin	http://jiance.tianjinep.com/	Established a platform for real-time data release; publishes automatic monitoring data once every two hours for wastewater and every hour for exhaust gas. Tianjin's platform exhibits the following characteristics: • Information is not released in a timely or regular fashion. According to data analysis, the average data acquisition rate in Tianjin was 9.31%. • Completeness was insufficient; real-time monitoring data was not integrated into a display of standard limits, making it inconvenient for the public to be informed of which monitored enterprises have exceeded limits.
Sichuan	http://www.schj.gov.cn/ wryjcxx/webpage!indexPage. action	Established a platform for real-time data release; publishes automatic monitoring data at a frequency of every two hours for wastewater and every hour for exhaust gas. Sichuan's platform exhibits the following characteristics: • Information release is not timely; according to data analysis, the seven evaluated cities in Sichuan have an average data acquisition rate of 8.2%; • Platform demonstrates good completeness; releases information about each monitoring indicator's real-time concentration levels, as well as each indicator's corresponding standard limits and whether each indicator is in excess, making it convenient for the public to be informed of whether enterprises' emissions are in excess; • Real-time monitoring data is integrated into a map display, making it convenient for the public to search surrounding enterprises' emissions.

Breakthroughs & Beginnings

Guizhou	http://www.gzqyjpjc.com/qydt/	Established a platform for real-time data release; publishes automatic monitoring data once an hour for wastewater and exhaust gas. Guizhou's platform exhibits the following characteristics: • Information release is not timely; according to an analysis of the statistics, the two evaluated cities in Guizhou have an average data acquisition rate of 11.2%; • Daily average values of automatic monitoring data are displayed in a graph of data trends; furthermore, one can also use a search function to inquire about specific conditions. However, hourly monitoring data can only be looked up for certain points in time, whereas the monitoring data from some time periods is inaccessible.
Heilongjiang	http://1.189.191.146:8080/eMonPubHLJ/	Established a platform for real-time data release, but the automatic monitoring data for key monitored enterprises is not released in a systematic or regular fashion.
Jilin	http://182.50.0.150/eMonPubJL/	Established a platform for real-time data release, but the automatic monitoring data for key monitored enterprises is not released in a systematic or regular fashion.
Liaoning	http://218.60.25.88/Main/City/0879c99d-3fd5-4a60-8597-2e518787d987	Established a platform for real-time data release, but the automatic monitoring data for key monitored enterprises is not released in a systematic or regular fashion.
Chongqing	http://222.177.117.35:808/publish/dataSearchPub/entList.aspx?datatype=1	No established real-time release platform for automatic monitoring data for this municipality. Established a special web column to publicize relevant data, which publishes the previous day's pollutant monitoring data on a daily basis.
Yunnan	http://www.7c.gov.cn/pw/search_shui.aspx	No established real-time release platform for automatic monitoring data for this province. Established a special web column to publish relevant data, which publishes the previous day's pollutant monitoring data on a daily basis.
Qinghai	http://125.72.24.150:8083/pub/jkpt/	No established real-time release platform for automatic monitoring data for this province. Established a platform for the release of key monitored enterprises' automatic monitoring information, which collects and issues a compiled list of each enterprise's automatic monitoring data.
Guangdong	http://58.248.45.75/selfmonitor/list?regionID=4401&reportType=2&enterpriseName&title&page=1	No established real-time release platform for automatic monitoring data for this province. Established a special web column for the release of relevant data, which releases a compiled list of the previous day's pollutant monitoring data on a daily basis.
Gansu	http://www.gsep.gansu.gov.cn/ztgz/list.jsp?urltype=tree.TreeTempUrl&wbtreeid=1338	No established real-time release platform for automatic monitoring data for this province. Established a special web column to release "Announcement of the Automatic Monitoring Results of Gansu Province's State-Monitored Enterprises," which releases a compiled list of the previous day's pollutant monitoring data on a daily basis.
Shanxi	http://www.sxhb.gov.cn/news.do?action=newsWryhjXxjcList&id=708&parentId=708	No established real-time release platform for automatic monitoring data for this province. Established a special web column for the release of "Daily Average Online Monitoring Data of State-Monitored Key Pollution-Sources," but new information is not released in a timely manner; when viewed on May 19, 2014, the displayed information was from April 15, 2014.

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1.3 The strategic significance of real-time disclosure

Real-time disclosure's greatest significance is that it creates the possibility to break barriers that have long plagued the enforcement of environmental protection in China. Once the records of excessive emitters are released to the public in real-time, polluting enterprises will be subject to stringent societal supervision, local interference will be effectively contained, and the chronic lack of strict enforcement can be overcome.

Real-time disclosure also helps to identify pollution sources in different regions and drainage areas, and is conducive toward regional supervision and cooperation, thus promoting joint prevention and control.

Moreover, real-time disclosure means that key pollution-source data will be placed under close scrutiny from the public. In the future, this scrutiny will help improve the data quality of released pollution-source monitoring information.

1.4 The application of real-time disclosure

Real-time disclosure has tremendous potential to promote pollution reduction, but as a prerequisite, data for real-time disclosure must be fully accessible to the public, and societal supervision must be strengthened. At present, real-time monitoring data is released on more than 29 provinces' environmental protection bureaus' websites, but accessing this information is still not sufficiently straightforward.

To help the public more easily access real-time monitoring data, IPE developed a cell-phone application (app) called the "Pollution Map." Using this app, users can not only quickly obtain their city's air quality information, but can also search for real-time air pollution-source monitoring data released by provincial, autonomous region, and municipal environmental protection bureaus on their enterprise self-monitoring data platforms. The information available includes pollutant concentration levels, standard limits, multiples of excess emissions, and emission volumes, which can all help users identify "major emitters" nearby..

Figure 2.8 App Screenshot

2: A majority of regions have improved the systematization of routine supervision information disclosure

Routine supervision information—including information about enterprises' emissions that exceed standards or total emissions limits, as well as environmental protection administrative penalty records—relates to whether enterprises are complying with environmental protection regulations. This information is of the utmost importance. In previous assessments, beginning in 2008, the average scores for the 113 cities were all very limited in this aspect.

In the previous report, IPE and NRDC recommended that routine supervision information be released in a comprehensive, timely, and complete manner.

This round's assessment showed that although the average city score for routine supervision information disclosure is still only 7.1 points (out of a total of 23 points), many cities changed their formerly scattered publication methods and have shifted toward more systematic methods of releasing information.

Systematic release of routine supervision information is mainly reflected through regular publication of quarterly reports:

■ Scope of quarterly reports' publication

• During the 2013-2014 annual PITI assessment period, a total of 118 out of 120 cities produced quarterly reports; the two cities that have not yet launched quarterly reports are Anyang and Jingzhou. There are 97 cities that provided strong consecutive historical data; six cities, including Beijing, provided all previous quarterly reports from 2011 onwards.[15]

Figure 2.9 Release of Quarterly Supervisory Monitoring Reports

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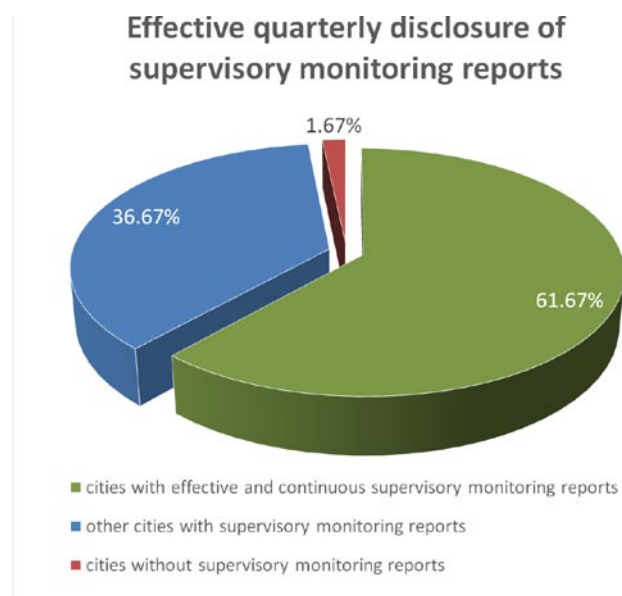
[15] The other five cities were Handan, Qiqihar, Guangzhou, Shaoguan and Lanzhou.

Case Study: Beijing's Quarterly Supervisory Monitoring Reports

Beijing began releasing its quarterly supervisory monitoring reports in 2011. Since then, these reports have been published each quarter, along with annual reports. For the first two years these quarterly reports only contained summaries, but from 2013 onwards, they began to include supervisory monitoring data. This increase in transparency represents substantive progress.

Figure 2.10 Screenshot of Beijing's Pollution-Source Environmental Monitoring Information[16]
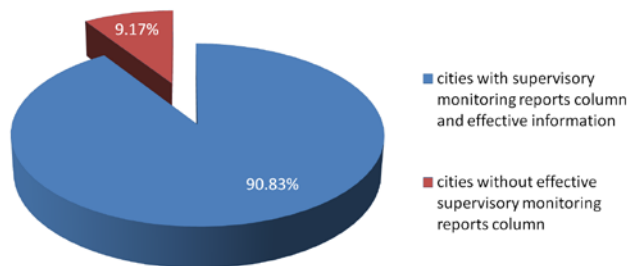
■ **A majority of cities released their quarterly reports using a special web column**

• 109 of the 120 evaluated cities' environmental protection bureau websites have a special "quarterly supervisory monitoring report" section of their web page to publish this information.

Figure 2.11 Online Release of Supervisory Monitoring Reports

Quarterly disclosure of supervisory monitoring reports

9.17%

90.83%

■ cities with supervisory monitoring reports column and effective information

■ cities without effective supervisory monitoring reports column

■ **Quarterly reports now more complete**

• From 2013, 99 cities included monitoring data when publishing their quarterly supervisory

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[16] Source of screenshot: Beijing Environmental Protection Bureau Website, URL: http://www.bjepb.gov.cn/bjepb/324138/325816/325834/index.html, screenshot time: May 21, 2014.

monitoring reports. The completeness of information reported by 86 of these cities saw improvements.

Case Study: Zhejiang Province's Quarterly Supervision Monitoring Reports

Zhejiang province's quarterly supervisory monitoring report compared the rate at which enterprises in cities in Zhejiang met emissions standards. Furthermore, it made a comparison with the corresponding period in the previous year's quarterly report, starting from provinces' supervision over cities, and urged each city to strengthen its enterprise supervision and reform efforts in order to improve enterprises' pollution control.

In 2014, 1671 enterprises in Zhejiang underwent supervisory monitoring inspections; of these, 478 enterprises did not meet emissions standards, 389 of which did not meet emissions standards for wastewater.

Figure 2.12 Screenshot of Zhejiang's 2014 First Quarter Key Pollution-Source Supervisory Monitoring Report[17]

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[17] Source of screenshot: Zhejiang Environmental Protection Bureau Website, URL: http://www.zjepb.gov.cn/hbtmhwz/hjjg/wryjc/, time of screenshot: May 21, 2014

Case Study: Ningbo's Quarterly Supervisory Monitoring Report

Ningbo started to use a new method of releasing supervisory monitoring data, and in 2013, established a supervisory monitoring platform for the real-time release of supervisory monitoring data. Visitors can choose enterprises at will, and can then search through a year's worth of information for each enterprise, making it easy to compare and track their performance. There are as many as 37 different types of enterprise monitoring data.

Figure 2.13 Screenshot of Ningbo's Supervisory Monitoring Platform[18]

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[16] Source of Graphic: Ningbo Environmental Protection Bureau website, URL: http://www.nbepb.gov.cn/XXGK_QiY_2.aspx/, time of screenshot: May 21, 2014.

Breakthroughs & Beginnings

No.	Pollutant	Monitoring date	Concen-tration observed	Concen-tration permitted	Unit	Emissions within limit?	By how many times do observed emissions exceed standard?	Relevant Standard
1	pH	2014-02-25	8.12	6-9		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
2	Total phosphorus	2014-02-25	0.145	1.5		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
3	LAS	2014-01-06		2		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
4	Ammonia	2014-02-17	3.37	8		Yes		Discharge standard of water pollutants for pulp and paper industry
5	COD	2014-02-25	92.1	200		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
6	Fecal coliform	2014-01-06		10000		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
7	Petroleum	2014-01-02		3		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
8	Chroma	2014-02-17	4	50		Yes		Discharge standard of water pollutants for pulp and paper industry
9	Total nitrogen	2014-02-17	3.52	12		Yes		Discharge standard of water pollutants for pulp and paper industry
10	Cr 6+	2014-02-25	<0.004	0.5		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
11	Fecal coliform	2014-01-02		10000		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
12	Production load	2014-02-17	112.0		%			Discharge standard of water pollutants for pulp and paper industry
13	Production load	2014-01-09	85.0		%			Discharge standards of water pollutants for woolen textile industry
14	Petroleum	2014-01-06		5		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
15	Animal and vegetable oil	2014-01-02		3		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
16	PH	2014-02-17	7.6	6-9		Yes		Discharge standard of water pollutants for pulp and paper industry
17	COD	2014-02-17	<30	90		Yes		Discharge standard of water pollutants for pulp and paper industry
18	BOD	2014-01-09	12.9	50		Yes		Discharge standards of water pollutants for woolen textile industry
19	BOD	2014-02-25	22.7	50		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
20	Chroma	2014-02-25	20	80		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry

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21	Ammonia nitrogen	2014-02-25	2.51	20		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
22	Total nitrogen	2014-01-06						Discharge standard of pollutants for municipal wastewater treatment plant
23	Ammonia nitrogen	2014-01-02		8		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
24	Total nitrogen	2014-01-02		20		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
25	PH	2014-01-09	7.16	6-9		Yes		Discharge standards of water pollutants for woolen textile industry
26	Total nitrogen	2014-02-25	5.99	30		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
27	Sulfide	2014-02-25	0.58	1		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
28	Ammonia nitrogen	2014-01-06		25		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
29	Outflow from the monitoring point	2014-02-17	21846.0		Tons/ day			
30	BOD	2014-02-17	5.2	20		Yes		Discharge standard of water pollutants for pulp and paper industry
31	Outflow from the monitoring point	2014-01-09	1200.0		Tons/ day			
32	Animal and vegetable oil	2014-01-09	<0.04	15		Yes		Discharge standards of water pollutants for woolen textile industry
33	Aniline	2014-02-25	0.06	1		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
34	Suspended matter	2014-02-25	17	100		Yes		Discharge standards of water pollutants for dyeing and finishing of textile industry
35	Animal and vegetable oil	2014-01-06		5		Yes		Discharge standard of pollutants for municipal wastewater treatment plant
36	Total phosphorus	2014-02-17	0.1	0.8		Yes		Discharge standard of water pollutants for pulp and paper industry
37	Suspended matter	2014-02-17	4	30		Yes		Discharge standard of water pollutants for pulp and paper industry

3: A disclosure system for enterprise emissions data is urgently needed

Disclosure of enterprise emissions data can help to protect the public's environmental interests and be a strong impetus for enterprises to recognize their pollutant emissions, thus achieving voluntary emissions reduction under societal supervision. Many European countries, the United States, Japan and other industrialized nations generally established systems similar to the "Pollutant Release and Transfer Register" (PRTR) system. These systems play a very important role in pollution prevention and control, especially the control of toxic and hazardous substances.

3.1 General requirements for emissions data disclosure have been established

According to the Environmental Information Disclosure Regulations (Trial) enacted in 2007, and the 2012 revisions to the Cleaner Production Promotion Law, the scope of mandatory enterprise environmental information disclosure is limited. Generally, for emissions data, mandatory disclosure of pollutant emissions information is only elicited when an enterprise's emissions are illegal, exceed the relevant standard, or result in major pollution accidents.

IPE and NRDC have been advocating for and promoting enterprise emissions data disclosure. We are pleased to see that since 2012, China's laws and regulations have made great progress in this area.

The Regulation on Hazardous Chemicals Environmental Registration Management (Trial) enacted in 2012 defined the responsibility to publish information about the release and transfer of key hazardous chemicals and specified pollutants, establishing China's first PRTR system.

Article 22 of the Regulation on Hazardous Chemicals Environmental Registration Management (Trial) states that: "Enterprises producing or using hazardous chemicals shall, every January, publish reports on the environmental management of hazardous chemicals and disclose to the public information on the categories, hazardous features, relevant release and accidents, and pollution prevention and control measures of hazardous chemicals produced or used in the last year. Enterprises producing or using hazardous chemicals that are subject to intensified environmental management shall also publish discharge and transfer information of these hazardous chemicals and the enterprises' specified pollutants, along with monitoring results."

The Measures on Supervisory Monitoring and Information Disclosure for Pollution Sources of Key National Supervision Enterprises (Trial) and Measures on Self-Monitoring and Information Disclosure by Key National Supervision Enterprises (Trial), respectively, defined the MEP's requirements for disclosure of nationally supervised enterprises' supervisory pollution-source monitoring and self-monitoring, including that reports should be published annually.

Measures on Self-monitoring and Information Disclosure by Key National Supervision Enterprises (Trial), Article 17: "By the end of each January, enterprises shall complete an annual report for self-monitoring carried out during the previous year, and shall submit the reports to environmental protection departments responsible for recording them. An annual report should contain the following:

(1) Adjustment or changes to monitoring plans;

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(2) Annual number of production days, monitoring days, and the frequency of monitoring, instances of compliance, and excess emissions for each monitoring point and indicator;

(3) Annual quantity of wastewater and exhaust gas emitted;

(4) Types, generated amount, disposal methods, disposal amount, and location of solid waste;

*(5) Results of mandatory monitoring of the impact on the quality of the surrounding environment.*

The revisions to the Environmental Protection Law passed on April 24, 2014 also clarified key emissions units' obligation for emissions information disclosure.

Environmental Protection Law, Article 55: "Key emissions units shall truthfully disclose to public the name, emissions channels, emissions concentration, total emissions quantity, whether emissions are within legal limits, and the status of construction and operation of pollution prevention and control mechanisms, and shall accept societal supervision."

3.2 Enterprise emissions data is still not fully disclosed

In our update to the PITI criteria, we have added an evaluation of enterprises' PRTR (pollutant release and transfer register) systems. The initial evaluation shows that most enterprises have not even put implementation of PRTR systems on their agendas, which also means that progress in the disclosure of enterprises' emissions data has been extremely limited.

Figure 2.14 Scoring of Key Enterprises' Pollutant Emissions Data Disclosure
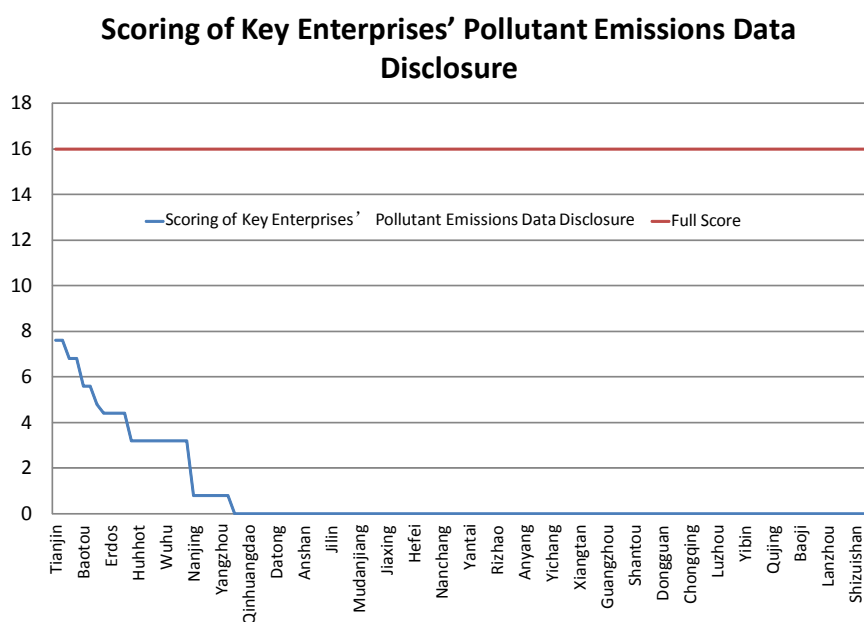
According to the assessment results, none of the evaluated cities received a passing score. Tianjin and Shenyang both earned a score of 7.6, tying for first place. Among the 120 evaluated cities, 93 cities disclosed no relevant information, receiving a score of 0.

Figure 2.15 PRTR Score Distribution Chart

PRTR Score Distribution Chart
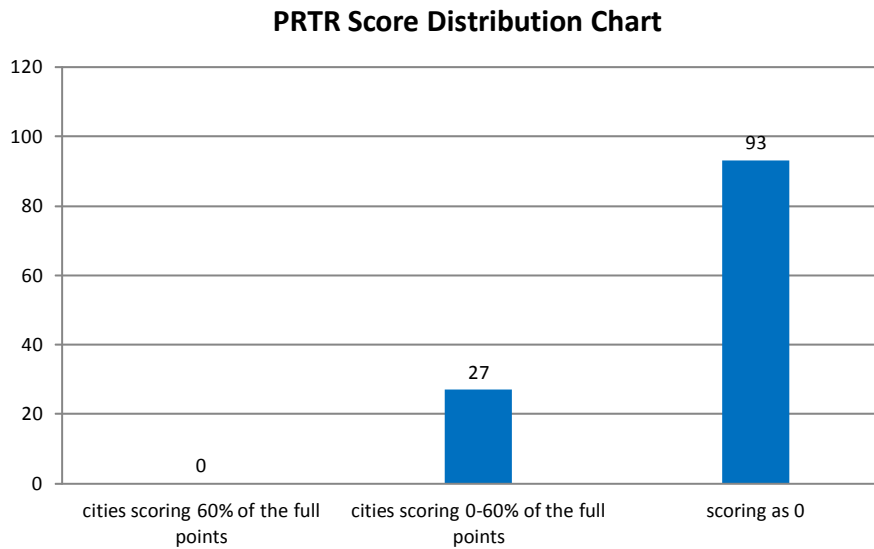
Among the 120 evaluated cities, only 27 earned scores for disclosing pollutant emissions data and scores of these 27 cities are not high. The first reason is that the number of enterprises actually disclosing such data is much lower than the number of key enterprises which should be disclosing data. The second reason is that data is only disclosed for a few types of pollutants, which runs contrary to both Chinese regulatory requirements and PRTR practices in Europe, the United States and Japan.

Completeness of the emissions data disclosed by the 27 cities is as follows:

Figure 2.16: Chart of PRTR Information Disclosure Completeness

PRTR Score Distribution Chart
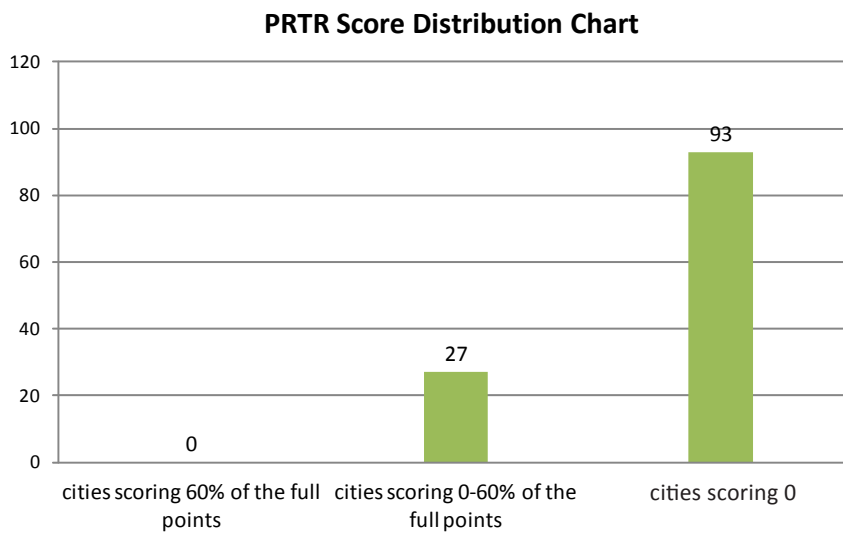
City	Conventiaonal Pollutant Emissions Data	Feature Pollutant Emissions Data	Annual Transfer/ Diposal Quantity of Solid Waste	Data on Key Hazardous Chemicals for Management	Types, Characteristics, and Emissions Data of Hazardous Chemicals
Tianjin	√	√	√	X	X
Shenyang	√	√	√	X	X
Xiamen	√	√	X	X	X
Ningbo	√	√	X	X	X
Beijing	√	√	X	X	X
Changzhou	√	X	X	X	X
Xuzhou	√	X	X	X	X
Zaozhuang	√	X	X	X	X
Baotou	√	X	X	X	X
Suzhou	√	X	X	X	X
Yancheng	√	X	X	X	X
Chifeng	√	X	X	X	X
Erdos	√	X	X	X	X
Qingdao	√	X	X	X	X
Weihai	√	X	X	X	X
Wuhu	√	X	X	X	X
Dalian	√	X	X	X	X
Fushun	√	X	X	X	X
Weifang	√	X	X	X	X
Nanning	√	X	X	X	X
Hohhot	√	X	X	X	X
Zhenjiang	√	X	X	X	X
Lianyungang	√	X	X	X	X
Yangzhou	√	X	X	X	X
Nanning	√	X	X	X	X
Wuxi	√	X	X	X	X
Nantong	√	X	X	X	X

Example:

Figure 2.17: Special Column for Enterprise Information Disclosure on the Tianjin Economic and Technological Development Zone's EPB Website[19]

3.3 An internationally accepted PRTR system should be established

In former PITI evaluation reports, IPE and NRDC have proposed the establishment of a PRTR system in China, and have discussed similar systems in the United States, the European Union, and Japan.

In the United States, most pollution sources are regulated through a permit system. A fundamental requirement for a permit system is the duty to periodically report emissions data. According to the Freedom of Information Act, permits, as well as emissions reports required under the permit and the permittee's compliance status must be disclosed.

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[19] Source: The website of environmental protection bureau of the Tianjin Economic and Technological Development Zone, URL: http://www. teda.gov.cn/html/hjbhj/QYHJXXGKZL12403/List/list_0.htm, last visited on June 4, 2014.

Sections 311 and 312 of the Emergency Planning and Community Right-to-Know Act issued in 1986 require relevant enterprises to report the storage location and quantity of chemicals stored in their plants to the states or local governments, and to help local communities prepare response measures for chemical spills or similar emergency situations. Section 313 requires the U.S. Environmental Protection Agency (EPA) and states to collect release and transfer data of toxic chemicals every year, and publish a Toxic Chemical Release Inventory (TRI). In 1990, Congress passed the Pollution Prevention Act, which requires the reporting of additional information concerning waste management and pollution sources reduction under the TRI framework.[20]

The TRI in the U.S. now includes more than 650 toxic chemicals released and transferred from more than 20,000 plants. In addition to the annual disclosure of toxic chemical release data, the U.S. EPA also processes the information to help the general public better understand environmental issues. For example, TRI Explorer provides county-level, state-level and national-level toxic substances release and transfer data sorted and organized by facility, type of chemical, geographic location, and industry. TRI.NET provides original TRI catalogue data for experienced users to download and conduct customized analyses.

Meanwhile, the U.S. EPA has developed a Toxic Release Inventory and Chemical Hazard Information Profile (TRI-CHIP). This online database can help professionals better understand the impacts chemicals included in the TRI have on human health.

Figure 2.18: TRI Explorer[21]

The European Union, Japan and Australia have also established PRTR systems which, like the TRI system, allow access to information on toxic pollution emissions.

In addition, in 1993, the European Union established an Eco-Management and Audit Scheme (EMAS), which is a voluntary environmental management measure that allows enterprises and other organizations to evaluate, report, and improve their environmental performance. Enterprises participating in the EMAS must adopt environmental-friendly policies, including the ISO 14001

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environmental management standards, and are also required to report their pollutant emissions, waste generation, raw material consumption, and energy and water consumption. More than 4600 organizations and 7900 plants have registered for the EMAS.[22]

Figure 2.19 EMAS[23]
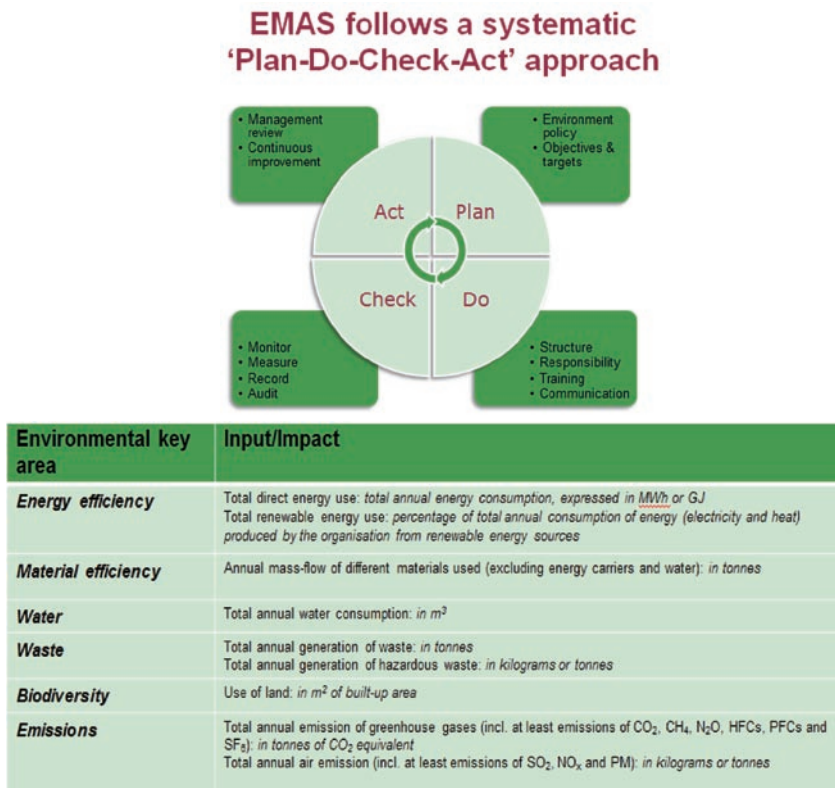
EMAS provides a set of core indices to evaluate environmental performances and continuously keep track of environmental improvement:

Japan's Chemical Substances Emissions Management Promotion Law, enacted by the Ministry of the Environment on July 13, 1999, requires relevant enterprises to submit an annual report on the release and transfer of Class I designated chemical substances (of which there are 354), and to provide a Material Safety Data Sheet (MSDS) to their business partners when trading designated Class I and Class II chemical substances (there are 81 Class II substances) and products containing these substances. The MSDS introduces physical and chemical properties of contained substances, as well as precautions and preventive measures when using these substances. Class II designated chemical substances are not regulated by the PRTR system. At the end of 2002, relevant enterprises published their complete data up until that point in time, and have subsequently disclosed data to the government on an annual basis.[24]

[22] http://eenviper.eu/uploads/files/eEnviPer_Newsletter_4_design_lores.pdf
[23] Source: http://ec.europa.eu/environment/emas/documents/presentation_en.htm, May 25, 2014
[24] Japanese cases are excerpted from the previous PITI report, URL: http://www.ipe.org.cn/Upload/Report-PITI-2011-EN.pdf

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4: Informed public participation in environmental impact assessments still needs improvement

Environmental Impact Assessments (EIA) are designed to prevent environmental damages from the very beginning. EIAs analyze, predict, and assess the environmental impacts of plans and projects, propose mitigation measures, and compare and select based on all potential alternatives.

It has been more than 30 years since China adopted its EIA system. Unfortunately, the "pollute now, clean up later," and "pollute and clean up simultaneously" approaches are still prevalent in China. Why has the EIA not played as effective a role in China as it has in the West? We believe an important reason is that China only copied the technical assessment aspect of EIAs from the West and ignored public participation, which is essential to a high-quality and effective EIA.

4.1 EIA information disclosure has achieved breakthroughs

In the previous PITI report, we suggested that the full text of EIA reports should be disclosed. Furthermore, 26 Chinese NGOs have jointly advocated comprehensive pollution-source information disclosure, including disclosure of the full text of EIA reports. During the process of soliciting comments for the Environmental Law revision, IPE and many NGO partners suggested adding a clause requiring the disclosure of the full text of EIA reports. The Guide for Governmental Information Disclosure Concerning EIA of Construction Projects (Trial) issued by the Ministry of Environmental Protection on November 14, 2013, required disclosure of the full text of EIA reports. In addition, the Environmental Law revision passed on April 24, 2014 also established the requirement for the full text of EIA reports to be disclosed.

In this assessment, we found that some regions have made substantial progress toward disclosure of the full text of EIA reports. The score chart for EIA information disclosure is as follows:

Figure 2.20: Score Chart for EIA Information Disclosure
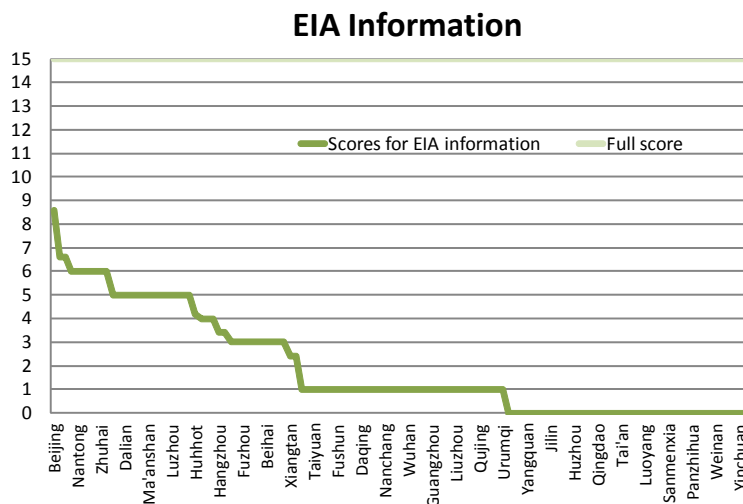
24 Japanese cases are excerpted from the previous PITI report, URL: http://www.ipe.org.cn/Upload/Report-PITI-2011-EN.pdf
25 For more details, please see: http://www.zhb.gov.cn/gkml/hbb/bgt/201311/t20131118_263486.htm

Among the 120 evaluated cities, 42 cities disclosed the full text of EIA reports. The results are as follows:

Figure 2.21 Statistical Results of EIA Information Disclosure

	Disclosed full text of EIA reports	Disclosed abridged version of EIA reports	Other
Total number of cities	42	35	43
Proportion of all evaluated cities	35%	29.17%	35.83%

4.2 Flaws in the procedures for public participation have resulted in insufficient public knowledge

Disclosure of the full text of EIA reports is an important prerequisite for informed public participation, but it is not the only one. It must be supplemented by a set of information disclosure channels in order to ensure that the public has actual access to the information. The timing of solicitation of public comments is one of the key indices.

In China, the public comment period for an EIA must be at least 10 days, but there is no guarantee of supplementary participation programs, such as community meetings. Thus, the public usually does not know that EIA information has been disclosed, or that the comment period has ended. In this round of the evaluation, the comment periods for the 42 cities that disclosed the full text of EIA reports are as follows:

Figure 2.22 Public Comment Periods of 42 Cities Disclosing Full Text of EIA Reports

Comment Period	Less than 10 days	10 days	More than 10 days
Number of Cities	8	34	0
Proportion	19.05%	80.95%	0

The completeness index for the new evaluation standards mainly focuses on the procedures for public participation. This evaluation indicates that public participation procedures have yet to be fully implemented.

Figure 2.23 Completeness of Information Disclosure of the 42 Cities Disclosing the Full Text of EIA Reports

Public Participation Methods	Informed of the right to administrative review and administrative litigation	Full explanation given as part of the first release of information to stakeholder communities	Clarification and communication regarding the project given to stakeholder communities	Organized public hearings for projects with significant impact[26]	EIA acceptance documents contained explanation as to why public comments were or were not adopted and the reasons behind the decision
Number of Cities	31	0	1	20	0

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[26] Organized more than one environmental impact public hearing from 2013 to May 2014

User-friendliness indices in the new evaluation criteria mainly focus on multiple channels for information disclosure. This round's assessment shows that some areas have started using various different methods for disclosing information. However, two-way communication between the public and the government is not enough. From Figure 2.24, we can see that all of the 42 cities disclosing the full text of EIA reports have set up special webpages to disclose relevant information, but only nine cities have disclosed information through online media, mass media, and other methods that are convenient for public access. Only Beijing has implemented community communication during the EIA public participation process and broadcasted community meetings through various media channels. None of the EIA public hearings for projects with significant environmental impacts are broadcasted live on television or the internet. Statistical results are as follows:

Figure 2.24 Communication Channels of the 42 Cities Disclosing Full Text of EIA Reports

Communication Channels	Specia Webpage	Online media, mass media or social media	Community assembly broadcast on various media channels	Public hearings broadcasted live on television or internet
Number of Cities	42	9	1	0

4.3 Lessons from international EIA public participation procedures

Our first example is the United States. Preparing an Environmental Impact Statement (EIS) is the core of the comprehensive EIA process in the U.S. In each of the EIS stages—screening, scoping, draft submission, and final submission—public opinion is solicited and considered. Within 90 days of the publication of the U.S. EPA's Notice of Proposed Rulemaking in the Federal Register, the agency responsible for the EIA must allow any interested persons and organizations to make comments. When the final EIS is completed, the responsible agency must again consult with the public for comments on the final draft. The comment period provided for in the Council of Environmental Quality's Regulation for Implementing the National Environmental Policy Act is 30 days.[27]

In addition to publication of the full text of EIA reports and provision of an adequate comment period, China still needs to establish a more sophisticated process for public participation. In this respect, there are many international experiences which China can learn from.

The EIA public participation process in the U.S. and Germany is as follows:

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[27] Research on the U.S. Public Participation in EIA, Zhu Lihua, March 2011, URL: http://www.doc88.com/p-389437745714.html

Figure 2.25 EIA Public Participation Process in the U.S. and Germany[28]

Notice of intent

Scoping

Analysis

DEIS, notice of availability

Comment period

FEIS, notice of availability

Comment period for CEQ referral

Implementation

Comment period for CEQ referral

Record of decision

There are two types of public participation methods: conference and non-conference.

Figure 2.26: Conference Methods Often Used to Involve the Public in Administrative Planning Processes[29]

- Public hearing
- Large public meeting
    Official statement and Q&A
    Informal discussion
    Informal town meeting
    Assembly of all citizens along with focus groups
- Public committee
- Core group
- Informal small group meeting
- Advisory group (such as a task force or citizens' commission)

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[28] Comparative Study on Public Participation in EIA in the U.S. and Germany, Wang Guofeng, May 20, 2010.
[29] Environmental Management and Impact Assessment, Lenard Ortolano, Chemical Industrial Press, pp. 368-369.

Figure 2.27 Non-Conference Public Participation Methods[30]

- Provide information to the public
   Direct mail, either by post or e-mail
   Field investigation
   Mass media campaigns (publicity materials, radio, television, advertisements)
   Announcements, advertising, public display
   Reports, brochures, information bulletins
- Obtain information from the public
   Written comments required by administrative departments
   Editorials and letters to the editor
   Public-opinion polls
   Information bulletin feedback cards
   Detailed studies and surveys
- Establish two-way communication
   Information contact
   Call-in radio or television programs
   Meetings
   Telephone consultations
   Online chat rooms

5: Weibo has become a new communication channel

In recent years, with the rise of Weibo and other social media, environmental protection bureaus in some areas have begun to use Weibo to communicate and interact with the public. At first, some environmental protection officials established personal Weibo accounts. For example, Du Shaozhong, former deputy director of the Beijing Environmental Protection Bureau, Zhang Jian, former director of the Jiaxing Environmental Protection Bureau, and several other officials have established Weibo accounts under their own names to communicate with the public online.

Beijing Environmental Protection Bureau and the Departments of Environmental Protection of Jiangsu and Zhejiang have established official Weibo accounts that are mainly used for publishing information. The Beijing Environmental Education Center, and environmental protection departments in Shanghai, Tianjin, Zhengzhou, Wuhan, Nanjing, Ningbo, Suzhou, Guangzhou, etc., have established Weibo accounts that are mainly used as platforms for disseminating information.

[30] Environmental Management and Impact Assessment, Lenard Ortolano, Chemical Industrial Press, pp. 368-369

Though the Weibo account @绿水青山总关情 ("care for the rivers and hills"), registered by the director of the Legal Publicity Office of Hunan Environmental Protection Bureau, is not under someone's real name, it is well-known by local environmental NGOs and has become a convenient channel for reports and complaints. Local environmental NGOs and volunteers often tag @绿水青山总关情 on Weibo, and @绿水青山总关情 will usually promptly tag local environmental protection departments; this has become a model for information dissemination through Weibo.[31]

An example of Weibo interaction in Hunan:

@Green Hunan: #Declare war onpollution #What happened today? Today, on the 65th annual Earth Day, within the timespan of just 10 hours, pollution was identified and reported, the EPB actively responded and conducted an on-site investigation, and volunteers from downstream made an appointment to meet with the director upstream. They met with the director that afternoon, and at 9 p.m. the EPB published pollution sources and treatment progress! Xiang River watchmen in Zhuzhou and Xiangtan joined together to fight a battle for pollution oversight.

Figure 2.28 Hunan Weibo Interaction

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[31] Other active and influential Weibo accounts run by environmental protection officials include the Weibo accounts of MEP Environmental Education Center Director Jia Feng (@Jiafeng) and that of He Chunyin from the Jiangsu Environmental Protection Department (@HeChunyinWeixiang).

A more systematic means for using Weibo to communicate with the public originated in Shandong Province. In May 2013, the Shandong Environmental Protection Department registered an official Weibo account, @ShandongEnvironment, and 17 prefecture-level cities subsequently opened their own official environmental protection Weibo accounts. Since then, the environmental protection departments of nearly 100 counties and districts have opened Weibo accounts. The Shandong environmental protection departments' Weibo presence is not just a platform for information publication. @QingdaoEnvironment, @BinzhouEnvironment, and others demonstrate relatively strong interactivity. Personal Weibo accounts such as @ShengtaiMengren, @DingniuZhihuibao, @ShandongSpirit, @Dalincui, etc. are also active. Thus, Shandong has developed a rudimentary system spanning the entire province for using Weibo to publish information online, receive complaints, and communicate with the public.

The Shandong Environmental Protection Bureau has elaborated about this practice on its official website: *[…] the Weibo working system, which consists of both official and personal Weibo accounts, has been used to gather public opinion, interact with the public, take questions, and resolve conflicts. In these roles, Weibo has proven its advantages as a new-media broadcast platform which is sensitive to the public's needs and capable of rapid response [….] Weibo serves as an interactive platform connecting the government and the public, and reflecting the spirit of the times. Interaction between the government and the public on the level field of Weibo also demonstrates political democracy and government efficiency in a new age.* [32]

Shandong's Environmental Protection Bureau summarized the three primary functions of their Weibo system as follows:[33]

- An important channel for governmental information disclosure with a wide range of coverage and strong broadcasting capacity, which has expanded the scope of information disclosure and made public access to government information more convenient.

- A platform to receive public opinions and solicit comments, communicate more actively with internet users, become closer to the public, understand public sentiment, resolve conflicts, and enhance public participation in government decision-making.

- A platform to raise complaints and petitions, facilitating cooperation with other online petition platforms and petition departments to promptly respond to, identify and address environmental violations.

There are three announcement boards on @ShandongEnvironment's home page, which link to the "Recommendation," "Petition," and "Public Services" pages, enabling internet users to interact via Weibo and other websites. Furthermore, the account regularly publishes "topics for discussion" and works with internet users' questions and claims according to the relevant procedures.

[32] http://www.sdein.gov.cn/dtxx/hbyw/201307/t20130702_226536.html
[33] http://www.sdein.gov.cn/dtxx/hbyw/201307/t20130702_226536.html

Figure 2.29 @ShandongEnvironment on Sina Weibo[34]

Shandong, Hunan, and other areas have attempted to take the first step toward establishing a Weibo environmental protection system. Weibo has significant advantages in terms of interactivity and timeliness. However, once an official Weibo account for environmental protection monitoring has been established, the account may face demands for interaction from many different angles, which will be a challenge for environmental protection departments, and will increase the demands of the policy and operational capacity of officials in charge of the official Weibo account.

Meanwhile, since official Weibo accounts are a new concept, they are not legally regulated and are not official channels for complaints, and therefore may face limitations in terms of manpower, resources, and capacity—they may even become inactive, to the point of existing in name only. On his Weibo, @ShengtaiMengren from Shandong Environmental Education center expressed his concerns on this issue: Expectation: *[Shandong County-Level Official Environmental Protection Weibo Should Communicate More with Internet Users] Although we know that nearly 100 county-level official environmental protection departments have established Weibo accounts, the operation of these accounts is worrisome. Some Weibo accounts never respond to Weibo users' reports, never disclose environmental information and never post any blogs. Isn't this weakening people's trust in the government? @LuozhuangEnvironment replied: There are certainly some challenges in running this operation. It is difficult to be confident in the outcome of public-opinion work.*

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[34] @Shandong Environment Sino Weibo, URL: http://weibo.com/u/3354394424?from=myfollow_all, screenshot time: May 24, 2014.

6: The all-star lineup's scores show that dramatic improvements are possible

This is IPE's and NRDC's fifth joint national assessment of the implementation status of pollution-source information disclosure in key cities for environmental protection. In response to severe pollution, the two assessment organizations have implemented an overhaul of the PITI assessment standards, which has resulted in a decline in the average score from last year's 42.73 points to this year's 28.5 points.

It should be noted that despite an obvious decline in the scores of many cities in this assessment, the upgraded version of the PITI has a number of indicators which are essentially in line with international standards, including the assessment of real-time disclosure of pollution-source information, which is already at the forefront of international environmental-transparency metrics. The fact that Chinese cities' pollution-source information disclosure is for the first time measured by international standards is itself an indicator of China's progress in the disclosure of environmental information.

Are the new standards achievable? In order to answer this question, we put together the highest-scoring cities or provinces for each of the assessment areas, to create an "all-star lineup." They are:

Figure 2.30: All-Star Lineup

Area	Excessive emissions and other violations (23 points)	Enterprise environmental credibility (5 points)	Emissions fee information (2 points)	Self-monitoring information (20 points)	Information on petitions and complaints (7 points)	Disclosure upon application (8 points)	Disclosure of emissions data (16 points)	Cleaner production audit (4 points)	Disclosure of environmental impact assessment information (15 points)
First-place regions	Beijing	Nanjing, Wenzhou	Jingzhou	Shandong[35]	Yantai, Fuzhou, Yichang	Beijing, Changzhou, Xuzhou	Tianjin, Shenyang	Guilin	Beijing
Score	21.4	4.6	2	19	6.8	8	7.6	3.6	8.6

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[35] The 9 evaluated cities in Shandong, not including Weihai

Figure 2.31: All-Stars
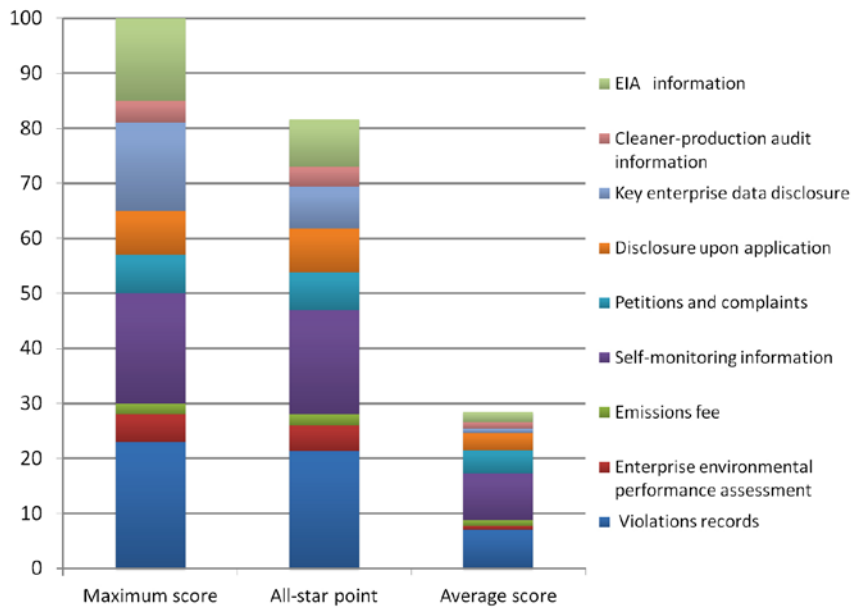
As the all-star lineup shows, out of a maximum of 100 points, the point total of the top-scoring regions in each assessment area is 81.6 points, far exceeding the 120-city average of 28.5 points. The good practices of these cities undoubtedly demonstrate that under the conditions now existing in China, it is possible to greatly expand the disclosure of pollution information.

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Chapter **3**

Recommendations

Based on the major findings of this round's assessment, IPE and NRDC propose the following five recommendations for pollution-source monitoring information disclosure:

1. Promote the exemplary practices of Shandong and other provinces. Expand real-time online disclosure of monitoring data and use societal supervision to overcome barriers to environmental enforcement.

2. Publish pollution-source routine supervision information in a comprehensive, timely and complete manner. Learn from good practices in Ningbo and other cities to integrate the publication of quarterly and daily reports onto one platform.

3. Publish a list of pollutants requiring mandatory disclosure. Learn from successful experiences and effective practices for online supervision information disclosure in Europe and the U.S.; provide legal requirements for establishing unified information disclosure platforms.

4. Revise the Environmental Impact Assessment Law as soon as possible, using internationally accepted regulations as a guideline for establishing a detailed public participation process. Utilize conferences and other non-conference methods to strengthen public participation in environmental policy.

5. Capitalize on opportunities arising from technological development, taking advantage of social media such as Weibo and other channels to improve interaction between environmental protection bureaus and the public.

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[36] Nine cities in Shandong province besides Weihai.

Appendix 1: Assessment Standards

1. Assessment subjects

The 2013-2014 annual PITI index selected 120 cities nationwide as assessment subjects, expanding the scope of the previous four studies by seven cities. These 120 cities included 111 "key cities for environmental protection," widely distributed across China's eastern, central, and western regions.

2. Summary of assessment criteria

Disclosure of information concerning excessive emissions and other violation records (23 points): Based on the "Methods for Environmental Information Disclosure (Trial)" and the "Methods for Key State-Monitored Enterprise Pollution-Source Supervisory Monitoring and Information Disclosure (Trial)," this assessment area primarily assesses two aspects: (1) the publication status of information about enterprises' excessive emissions and other violation records, such as the publication of administrative penalties, reports on environmental enforcement actions, environmental inspections, supervisory notices urging violators to correct their behavior, etc.; (2) the state of EPBs' supervisory monitoring of pollution sources and the publication of the results of such monitoring.

Enterprise environmental performance assessment and disclosure of enterprise environmental credibility information (5 points): According to the "Opinion on Accelerating the Implementation of the Enterprise Environmental Performance Assessment System," enterprise environmental performance assessments are based on the EPBs' environmental information on the enterprises. According to the given procedures and indicators, enterprises' environmental performance undergoes a comprehensive assessment to determine a grade; the assessment results are typically divided into "green," "blue," "yellow," "red," and "black." Enterprises which score "yellow" or lower are those which have exceeded emissions standards or total emissions limits, or have otherwise violated environmental laws. Additionally, based on the regulations on "Enterprise Environmental Credit Evaluation Methods (Trial)," which took effect on March 1, 2014, an enterprise's environmental credibility is divided into four grades: "good," "fair," "probationary," and "harmful," which respectively correspond to "green," "blue," "yellow," and "red" ratings. Thus, relevant agencies' work units can apply enterprises' environmental credibility results and take them into account when carrying out work responsibilities such as administrative permits, public procurement, financial support, evaluation of professional qualifications, etc. Therefore, because of the

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[36] The "key cities for environmental protection" are listed in the "11th Five-Year Plan for Environmental Protection," of which Haikou, Sanya, Lhasa, and Weihai were excluded from this study. The ten cities which were included in this assessment but were not "key cities for environmental protection" were: Dongguan, Zigong, Deyang, Nanchong, Zhenjiang, Yancheng, Yuxi, Weinan, Sanmenxia, and Ordos.

particular characteristics of a score of "yellow"—or "yellow rating" and lower, this category assesses the publication status of the development condition and results of enterprises' environmental performance assessment work as based primarily on whether the EPB gives all enterprises which were listed as violators under the first assessment category ("excessive emissions and other violation records") a score of "yellow" or worse.

Disclosure of information on pollution fees (2 points): The assessment for disclosure of information on pollution fees primarily includes instances of pollution fees, the amount of the fees, procedures and standards for levying fees, and reduction and exemption of pollution fees.

Disclosure of online monitoring information (20 points): According to the "Methods for Key State-Monitored Enterprise Self-Monitoring and Information Disclosure (Trial)," enterprises should publically release the development status of their monitoring work, along with their monitoring results. This assessment area focuses on a nation-wide assessment of the development of provincial EPBs' self-monitoring platforms, the publication content of enterprises' self-monitoring assessments, the amount of information published, and other related items.

Petitions and complaints (7 points): Based on the "Methods for Environmental Information Disclosure (Trial)," this area examines the disclosure of information on the handling of environmental petitions and complaints received by EPBs and their resolution results, including the subjects of the petitions and complaints, the name of the object of the complaint (the enterprise), whether the case has been accepted by the EPB, the status of the investigation, disclosure of the resolution results, etc.

Disclosure upon application (8 points): Based on the "Methods for Environmental Information Disclosure (Trial)," for information which is not exempted from disclosure by law, or information for which it is difficult to determine whether disclosure is required, EPBs should disclose any requested information, or else provide the source of any information that has already been disclosed. This assessment area primarily assesses whether the EPB has set up a regular and complete response system; for example, whether the channels for submitting applications were published, whether an adequate and timely response system was set up, and whether applications received a complete reply.

Disclosure of key enterprises' annual emissions data (16 points): Based on the "Methods for Key State-Monitored Enterprise Self-Monitoring and Information Disclosure (Trial)," enterprises should, by January 31 of each year, finish compiling the last year's self-monitoring status annual report and submit it to the EPB responsible for recording it. Also, according to the "Methods on Environmental Management and Registration of Hazardous Chemicals (Trial)," any enterprise using or producing hazardous chemicals should, each January, publically release an annual report on its environmental management of hazardous chemicals. This assessment area primarily evaluates the completeness of released annual emissions data, including areas such as the amount of pollutants emitted, hazardous waste transfer and disposal, and hazardous chemical discharge and transfer. In addition, the timeline of the release of annual emissions data and the number of enterprises releasing data are included in the assessment of this area.

Disclosure of cleaner production audit information (4 points): Based on the "Methods for Environmental Information Disclosure (Trial)," this assessment area primarily assesses the publication status of two types of information: (1) disclosure by governmental bureaus of the mandated clean-production audit enterprise list (the list of key enterprises); (2) whether government bureaus have released the information on behalf of enterprises which have not released their key pollutant emissions status as required by law within a month after the release of the mandated clean-production audit list.

Environmental Impact Assessment (EIA) information (15 points): Based on the "Guide to Governmental Information Disclosure of Environmental Impact Assessments for Construction Projects (Trial)," this category primarily assesses the following two factors: (1) the disclosure status of full text of Environmental Impact Assessment reports; and (2) the quality of efforts made at all levels of the environmental protection bureaus, through the media, community assemblies, public hearings, or otherwise, to gather public opinions and notify interested parties of their rights to administrative reconsideration and administrative litigation, before ruling on whether to approve or deny a construction project's EIA.

100 points total

For each assessment area, four "assessment aspects" are evaluated:

- **Systematicness**

  "Systematicness" primarily assesses two factors: comprehensiveness and continuity (or regularity).

  Comprehensiveness primarily assesses the amount of information regarding pollution that is actually published, compared to the amount of information that should have been published; Continuity primarily assesses whether the publication of pollution-source information is continuous and whether it follows a regular pattern.

- **Timeliness**

  "Timeliness" primarily assesses the extent to which disclosure of local pollution-source information is timely.

- **Completeness**

  "Completeness" primarily assesses the contents of information published regarding local pollution sources, as well as whether or not such information includes all essential information.

- **User-Friendliness**

  "User-friendliness" primarily assesses whether it is convenient for the user to obtain information on pollution sources.

Source: Primarily from online sources, combined with information collected from applications for disclosure and evaluation.

3. Summary of Assessment Methods

Grading system and the raising and lowering of scores:

In order to prevent the scoring process from being influenced by disparities in individual assessors' capacities for objective judgment, this assessment uses a "grading system" based on a 100-point scoring system. The four assessment aspects of systematicness, timeliness, completeness, and user-friendliness are divided into one of 6 grades: "excellent," "good," "moderate," "fair," "poor," or "very poor." For each of the nine assessment areas, the respective scores of the four assessment aspects add up to a total score and are assigned to one of the six grades, which are determined based on the arithmetic progression of the total score.

Each of the evaluation area's aspects is given a "raw score" based on the scoring guidelines; from the raw score, the aspect is assigned one of the 6 grades ("excellent," "good," "moderate," "fair," "poor," and "very poor"); the corresponding grade of the evaluation area's scoring aspect can then be obtained. If a given scoring aspect's raw score happens to be between two scoring grades and it is difficult to determine the exact grade, it should be assigned a grade based on the terms of the evaluation aspect's exact scoring guidelines.

Additionally, partial assessments are scored on each aspect using the "rules for raising and lowering grades." Even if a grade has already been assigned from the raw score, based on the method described above, the grade may be increased or decreased according to the specific scoring rules.

Systematicness-restricted scoring system:

The systematicness-restricted scoring system is used in the entire scoring system. Under this rule, a given evaluation's systematicness aspect score is used to limit the other aspect scores (timeliness, completeness, and user-friendliness), so that an assessment's final scores for the other three aspects are not allowed to exceed that assessment criteria's systematicness ranking.

The reason for this rule is that the systematicness score measures the completeness, continuity, and regularity of published information, and primarily involves the quantity of published information. On the other hand, "timeliness" and "completeness" primarily involve the quality of the information, while "user-friendliness" measures the quality of the publication itself. Because three of the aspects are assessed based on the published information, when scoring the last part we must increase the importance of the amount of information published compared to the amount which should have been published. The systematicness score includes a section on completeness, so it reflects to a greater extent the quantity of information published. The specific restriction guidelines can be seen in the following table:

Systematicness / Timeliness, Completeness and User-friendliness	Excellent	Good	Moderate	Fair	Poor
Excellent	Excellent	Good	Moderate	Fair	Poor
Good	Good	Good	Moderate	Fair	Poor
Moderate	Moderate	Fair	Fair	Fair	Poor
Fair	Fair	Poor	Poor	Poor	Poor
Poor	Poor	Poor	Poor	Poor	Poor

According to the systematicness-restricted scoring guidelines outlined above, suppose that a given evaluation's systematicness aspect score is ranked as "moderate," and that the assessment's timeliness aspect score, based on the original "Assessment Standard" would otherwise be ranked as "excellent." Under the "systematicness-restricted scoring rule," the timeliness aspect score would be lowered to "moderate;" if the timeliness score were originally ranked as "moderate," under the "systematicness-restricted scoring rule," the final score would be lowered to "fair;" if the timeliness score was originally ranked as "fair," the final score would be lowered to "poor." One may refer to the table above and apply the rule accordingly.

"Disclosure upon application" is an exception to the systematicness-restricted scoring rule. Since "disclosure upon application" has only been launched very recently, in order to encourage each EPB to improve as much as possible and develop a plan, this assessment's "user-friendliness" category only covers whether means of communication have been carried out, and not whether these means of communication are effective. Therefore, the completeness and user-friendliness aspects for this area are exempt from the "systematicness-restricted scoring rule."

For detailed evaluation rules, please see "Pollution Information Transparency Index Evaluation Methods (2013-2014)" (digital edition). Download link: http://www.ipe.org.cn/Upload/file/IPE /2013PITI指数评价标准_2013版_20140528.pdf.

Appendix 2: Table of Relevant Laws and Regulations

Document Title	Document Number	Date	Link
Notice on Enhancing Pollution Source Environmental Supervisory Information Disclosure	Issued by the MEP (huanfa) (2013) No. 74	July 12, 2013	http://www.zhb.gov.cn/gkml/hbb/bwj/201307/t20130717_255667.htm
Notice Regarding the Promulgation of "Methods for Key State-Monitored Enterprise Self-monitoring and Information Disclosure" and "Methods for Key State-Monitored Enterprise Pollution-Source Supervisory Monitoring and Information Disclosure (Trial)"	Issued by the MEP (huanfa) (2013) No. 81	July 30, 2013	http://www.zhb.gov.cn/gkml/hbb/bwj/201308/t20130801_256772.htm
Notice Regarding the Promulgation of "Guide to Governmental Information Disclosure of Environmental Impact Assessments for Construction Projects"	Issued by the General Office of MEP (huanban) (2013) No. 103	November 14, 2013	http://www.zhb.gov.cn/gkml/hbb/bgt/201311/t20131118_263486.htm
Environmental Protection Law of the People's Republic of China (Effective January 1, 2015)			http://zfs.mep.gov.cn/fl/201404/t20140425_271040.htm

Appendix 3: Major Cities' Annual Scores by Province

Top 10 Cities by PITI Score

Legend:
- Environmental Impact Assessment (EIA) information (15 points)
- Cleaner-production audit information (4 points)
- Key enterprise data (16 points)
- Disclosure upon request (8 points)
- Petitions and complaints (7 points)
- Self-monitoring information (20 points)
- Emissions fees (2 points)
- Enterprise environmental performance assessment (5 points)
- Excessive emissions and other violation records (23 points)

Bottom 10 Cities by PITI Score

Legend:
- Environmental Impact Assessment (EIA) information (15 points)
- Clean-production audit information (4 points)
- Key enterprise data (16 points)
- Disclosure upon application (8 points)
- Petitions and complaints (7 points)
- Self-monitoring information (20 points)
- Emissions fees (2 points)
- Enterprise environmental performance assessment (5 points)
- Excessive emissions and other violation records (23 points)

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PITI Scores for Four Municipalities: Five-Year Comparison

	Beijing	Shanghai	Tianjin	Chongqing
2013	58.7	54	38.3	18.8
2012	72.9	65.6	57.5	70.7
2011	72.9	68.8	50	67.1
2009-2010	43.5	67.2	26.2	53.9
2008	49.1	56.5	25.2	56.7
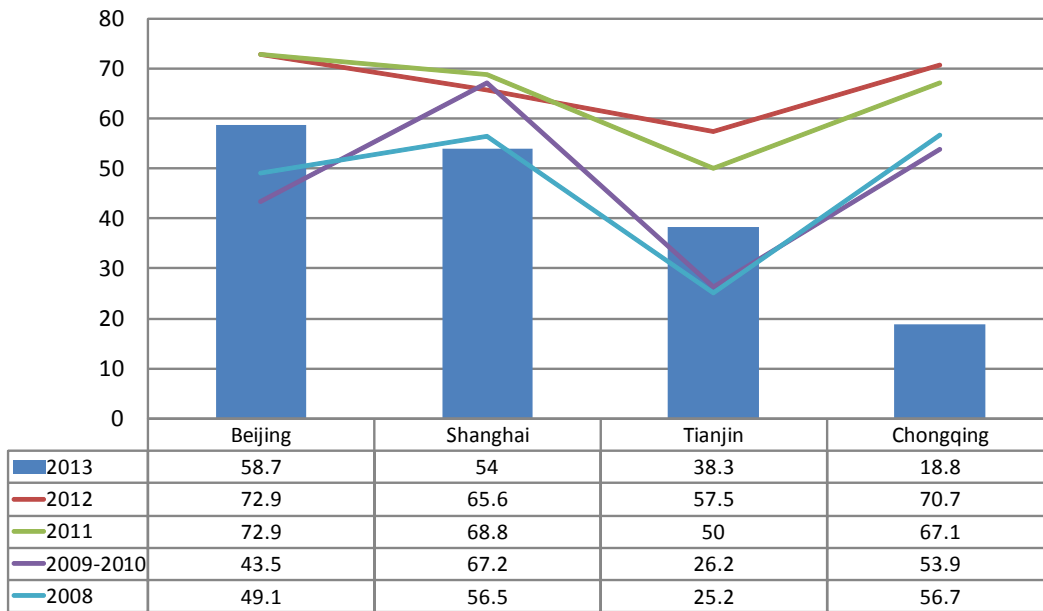
PITI Scores for Three Cities in Anhui: Five-Year Comparison

	Hefei	Wuhu	Ma'anshan
2013	38.9	38.7	42.9
2012	57.1	34.6	44.9
2011	55.2	30.6	57.1
2009-2010	56.8	34	44
2008	66.6	24.6	37.9
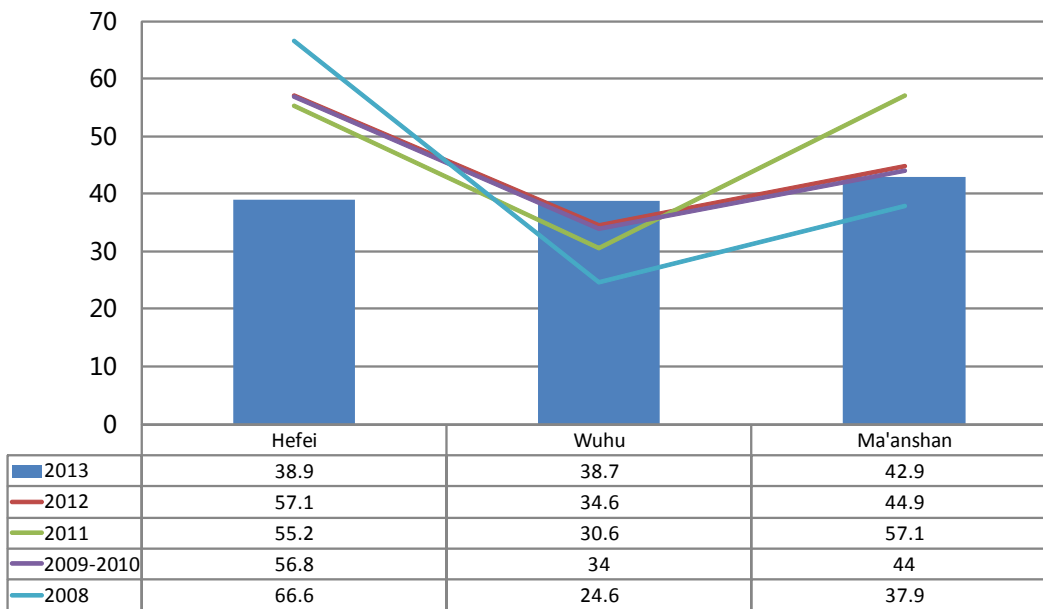
PITI Scores for Three Cities in Fujian: Five-Year Comparison

	Fuzhou	Xiamen	Quanzhou
2013	41.8	37.7	37
2012	67.4	27	65.4
2011	68.1	29.4	58.4
2009-2010	62.5	37.6	65.8
2008	63.7	26.6	50.6
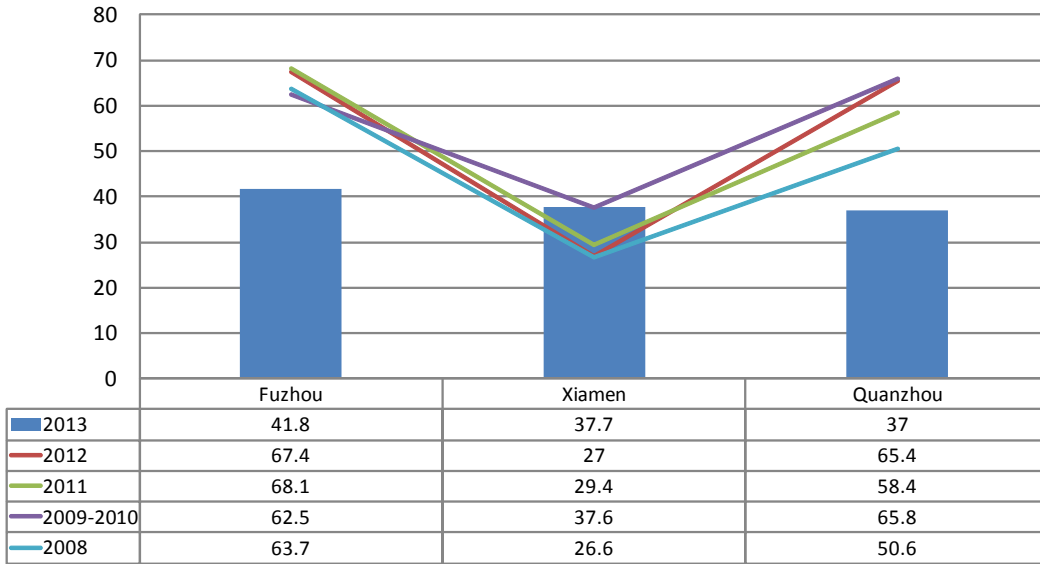
PITI Scores for Two Cities in Gansu: Five-Year Comparison

	Lanzhou	Jinchang
2013	15.2	15.3
2012	26	28.6
2011	32.6	19.6
2009-2010	28.5	17
2008	16.6	14.4
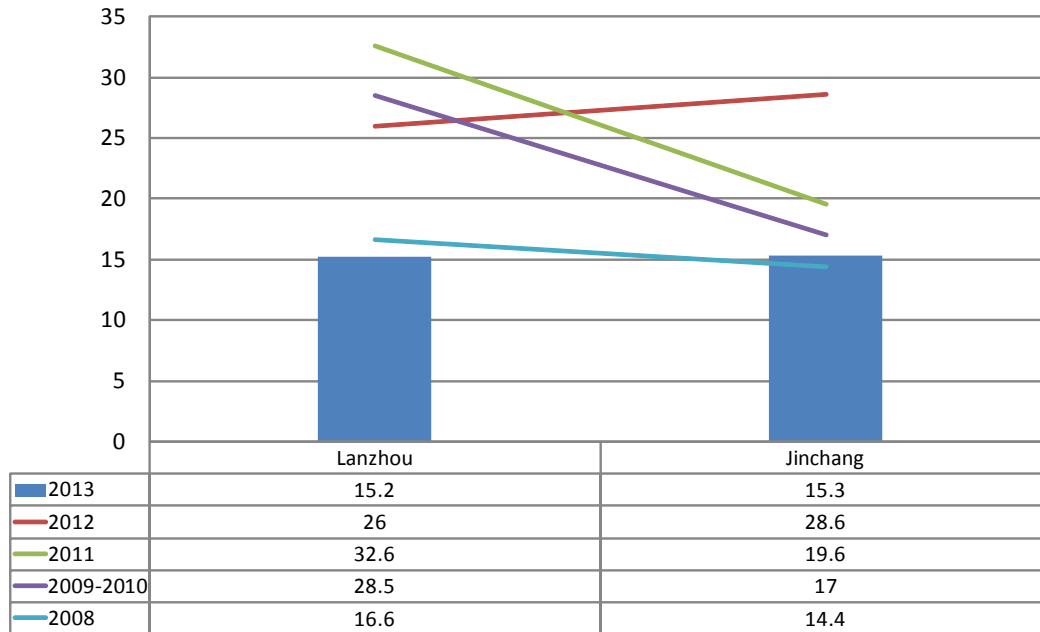
PITI Scores for Nine Cities in Guangdong: Five-Year Comparison

	Shenzhen	Guangzhou	Zhongshan	Dongguan	Foshan	Zhanjiang	Zhuhai	Shantou	Shaoguan
2013	35.4	34	33.8	30.3	26.4	24.5	23.7	16.4	12.2
2012	73.1	71.4	63.8	74.9	53.5	45.6	30.2	36.5	54.6
2011	83.3	61.2	76	72.1	74.6	39	39.4	56.7	25.6
2009-2010	74.5	51.9	66.4	58.5	70.3	32	37.2	46.9	18.8
2008	51.1	44.4	42.9	34.3	44.4	10.6	33.4	42.6	18.4

58
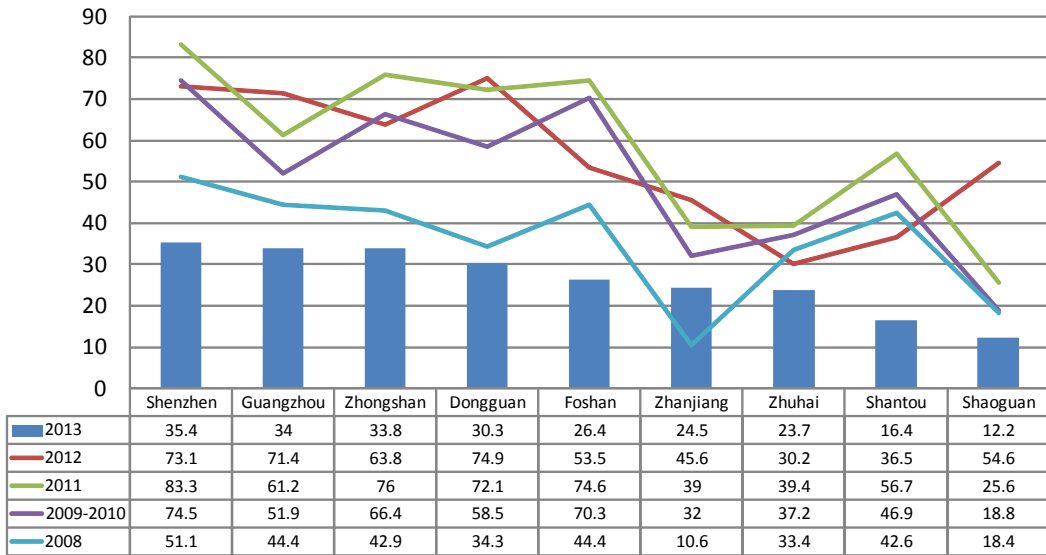
PITI Scores for Four Cities in Guangxi: Five-Year Comparison

	Liuzhou	Nanning	Guilin	Beihai
2013	28.1	26.7	24.5	23.6
2012	55.7	47.7	36.6	34.2
2011	32.3	55.8	43.2	45.3
2009-2010	34.6	36.9	33.8	33.8
2008	15.8	39.2	26.1	21
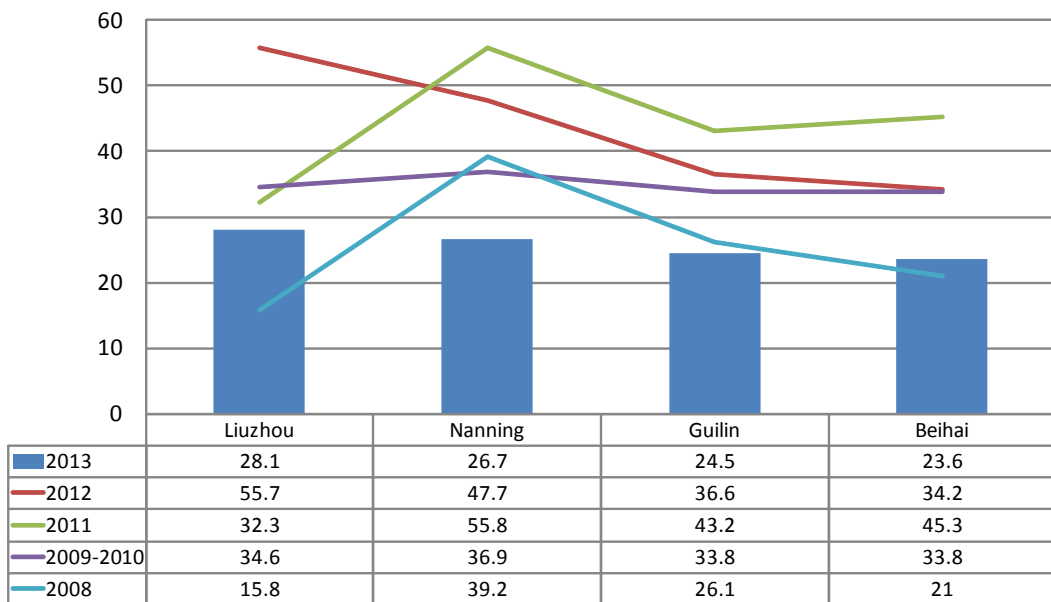
PITI Scores for Two Cities in Guizhou: Five-Year Comparison

	Zunyi	Guiyang
2013	30.6	21.2
2012	27.2	35
2011	13.4	43.2
2009-2010	15.2	22.4
2008	12.4	24.9
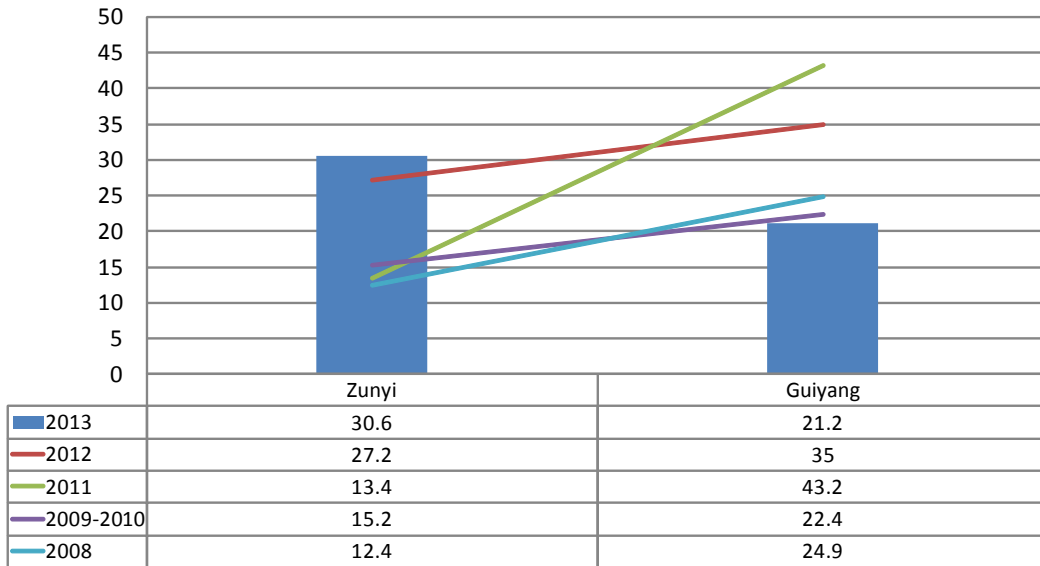
PITI Scores for Five Cities in Hebei: Five-Year Comparison

	Tangshan	Shijiazhuang	Handan	Baoding	Qinhuangdao
2013	32.5	31.9	30.7	25.3	20
2012	38.3	50.4	40.8	31.2	28.4
2011	34.7	55	34	49.2	24
2009-2010	41.5	34.2	31.2	43.1	20
2008	26.6	29.5	29.5	39.7	21.2
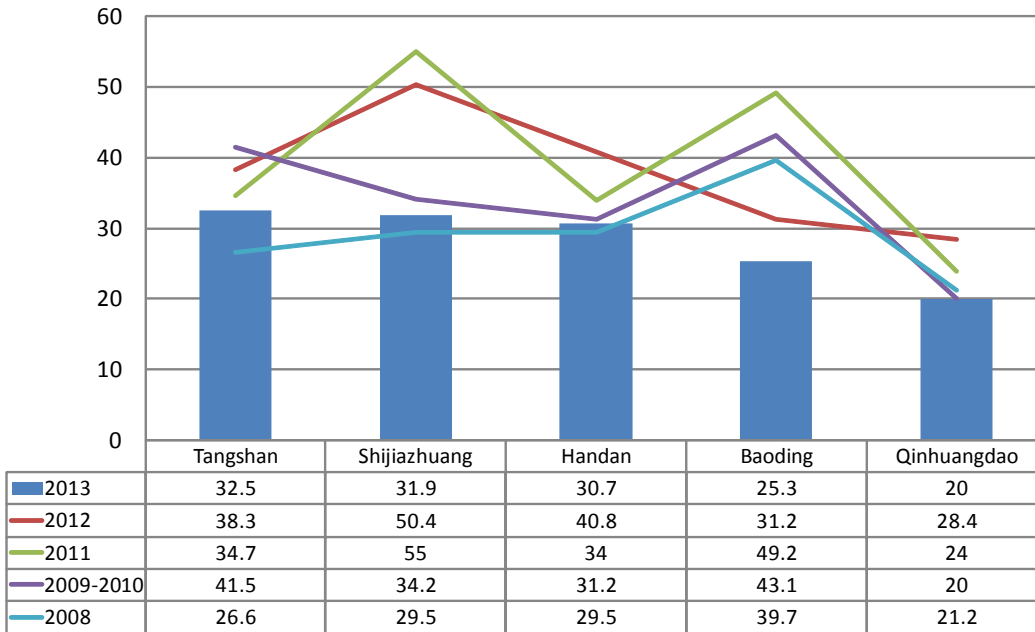
PITI Scores for Seven Cities in Henan: Five-Year Comparison

	Jiaozuo	Zhengzhou	Kaifeng	Pingdingshan	Luoyang	Anyang	Sanmenxia
2013	31.3	30.9	25.4	21.2	18.6	15.6	24
2012	52.6	33.8	49.1	33.4	57.1	27.2	
2011	42.9	29.1	38.4	28.4	55.8	26.3	
2009-2010	36.9	17.2	50	30.2	37.2	36.3	
2008	36.1	16.2	32.6	25.2	27	21	
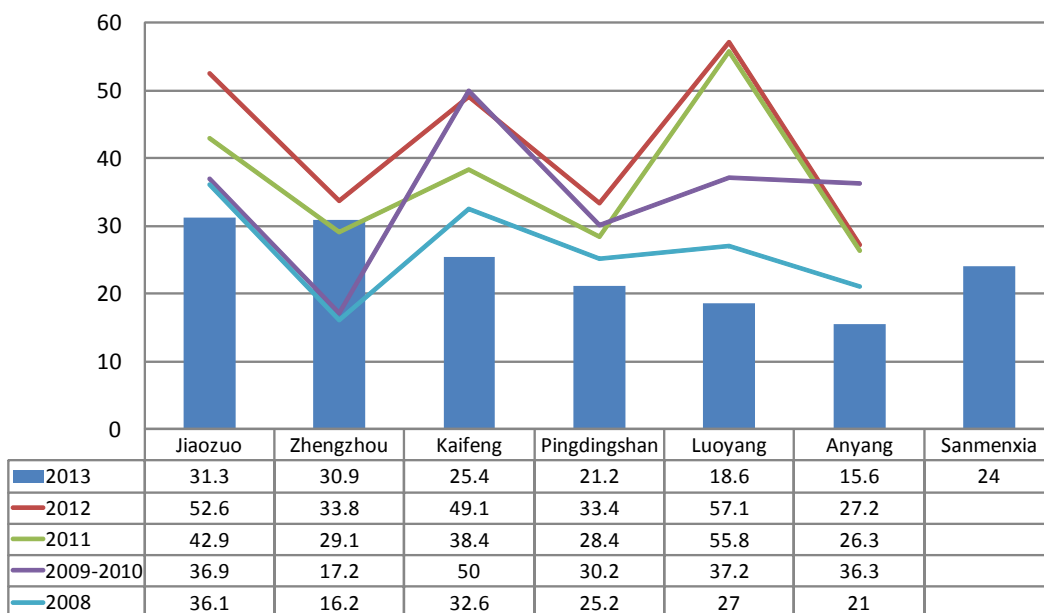
PITI Scores for Four Cities in Heilongjiang: Five-year Comparison

	Daqing	Qiqihar	Mudanjiang	Harbin
2013	20.1	19.6	17.2	13.5
2012	30.7	29.4	51.9	28.2
2011	39.1	21.6	49.7	32.6
2009-2010	41.5	27.6	30.4	39.8
2008	30	17.2	38.8	38.1
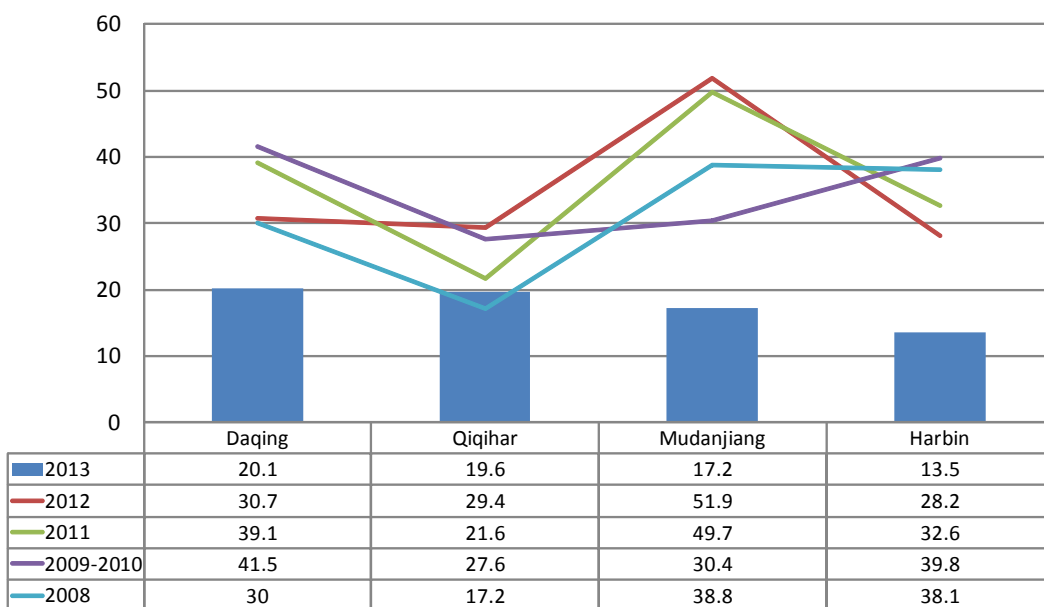
PITI Scores for Three Cities in Hubei: Five-Year Comparison

	Wuhan	Yichang	Jingzhou
2013	34.9	27.9	24.6
2012	52.5	67.9	51.4
2011	56	54.7	39.2
2009-2010	48	52.2	38.7
2008	61.2	33.7	40

61
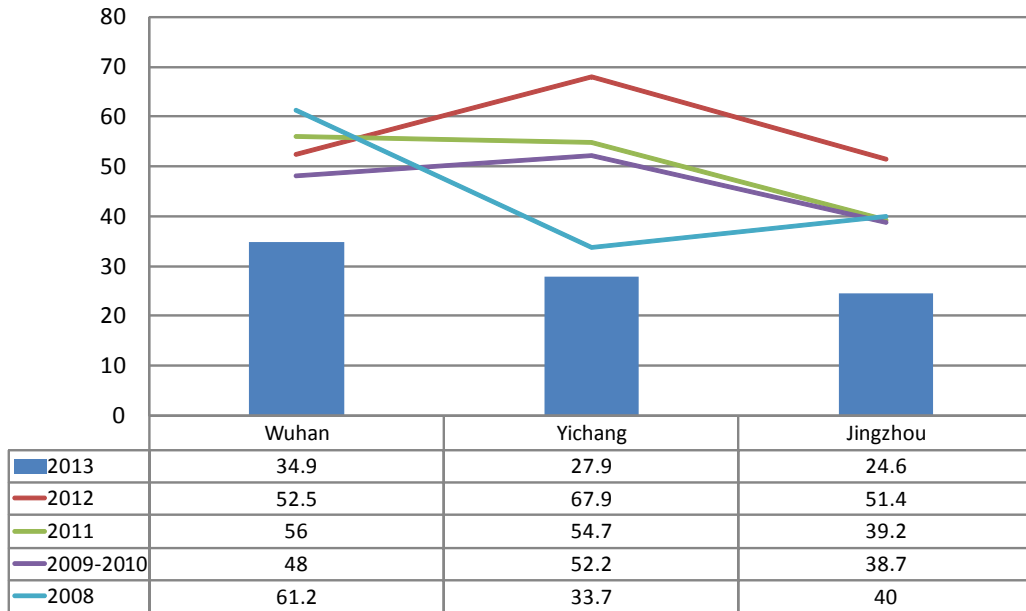
PITI Scores for Six Cities in Hunan: Five-Year Comparison

	Xiangtan	Changsha	Zhuzhou	Yueyang	Changde	Zhangjiajie
2013	30	25	23	22.5	22.4	14.2
2012	41.8	32	31.9	36.4	32.5	21.6
2011	39.6	27.5	25.2	22.2	40.4	15.6
2009-2010	20.4	35.8	21.2	25.4	34	19
2008	14	26.8	25.2	21.2	24.4	12.8
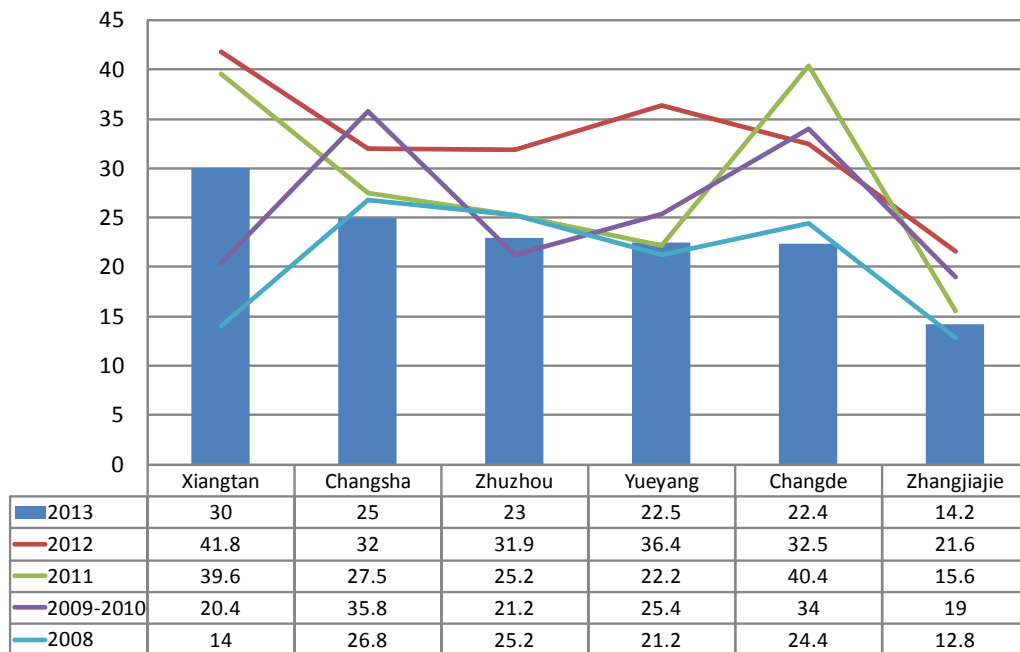
PITI Scores for Two Cities in Jilin: Five-Year Comparison

	Changchun	Jilin
2013	15.8	11.3
2012	20	20.2
2011	23.2	20.8
2009-2010	23.4	21.8
2008	21.7	10.2
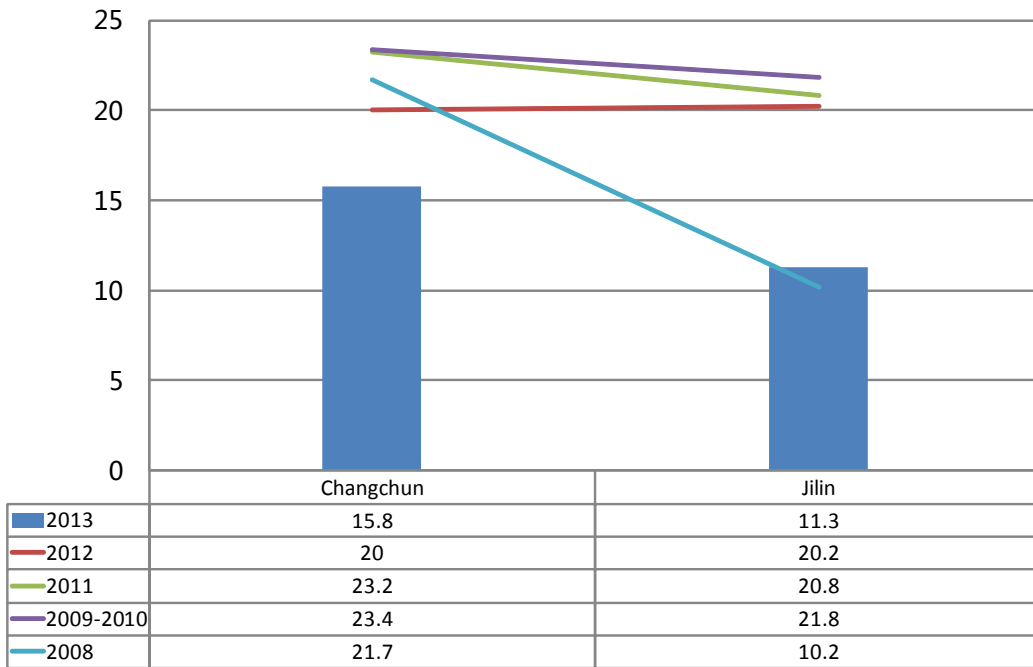
PITI Scores for Ten Cities in Jiangsu: Five-Year Comparison

	Yancheng	Xuzhou	Nantong	Lianyungang	Wuxi	Suzhou	Yangzhou	Changzhou	Nanjing	Zhenjiang
2013	34.2	36.2	36.8	39.6	42.1	42.5	43.7	47.6	50.9	55.3
2012	42	45.2	63.8	42.9	57.7	63.8	73	60.3	65.5	
2011年	41.3	35.3	63.1	27.9	60.3	60.1	45.4	76.8	62.7	
2009-2010	37.7	36.4	61.9	33.3	54.3	60.3	52.7	65.8	58.4	
2008	33	32.6	56.2	27	51.6	47	44.3	56.8	47.2	
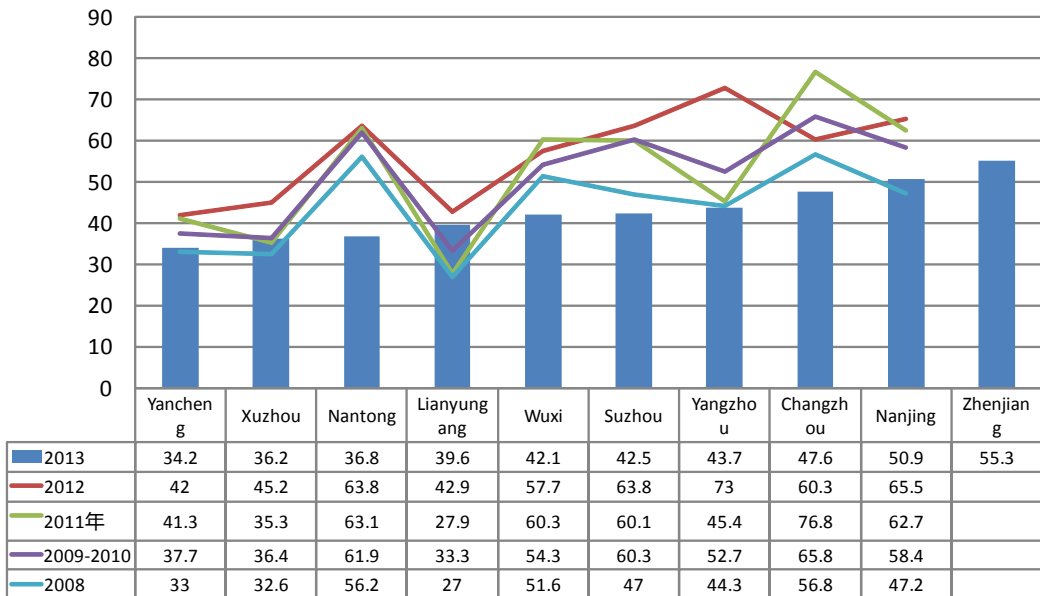
PITI Scores for Two Cities in Jiangxi: Five-Year Comparison

	2013	2012	2011	2009-2010	2008
Nanchang	33.3	38.2	26	24.4	23.2
Jiujiang	28.6	30.7	20.8	17.4	16.2

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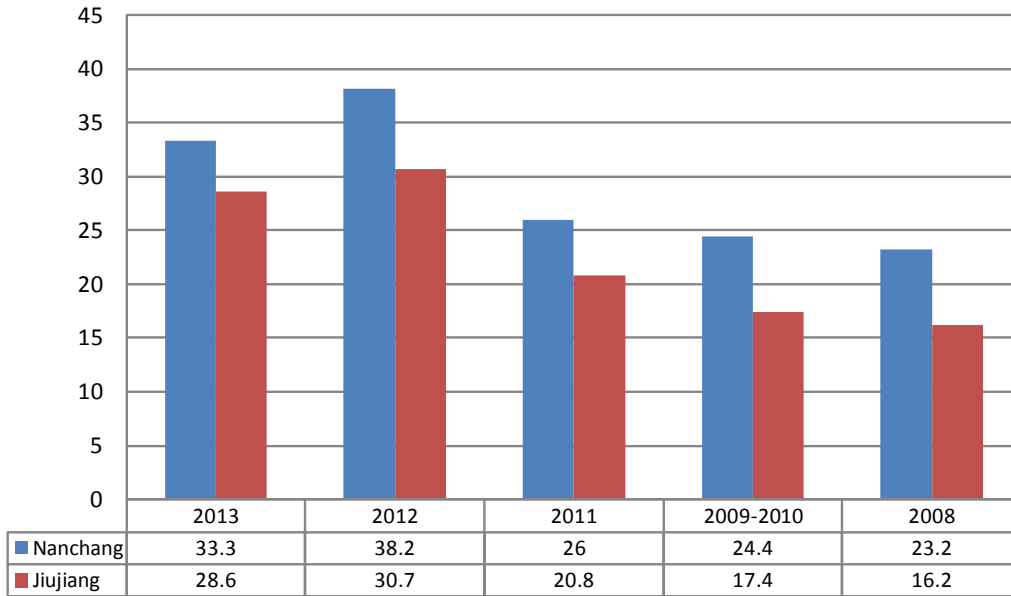
PITI Scores for Six Cities in Liaoning: Five-Year Comparison

	Shenyang	Dalian	Fushun	Benxi	Anshan	Jinzhou
2013	31	30.8	21.6	18.2	17.2	13.2
2012	52	39.7	41.5	46.2	25.2	22
2011	39.3	53.7	24.1	38	40	15.4
2009-2010	35.6	47.1	21	24	30.6	14
2008	38.8	51.7	21.6	12	16.2	20.4
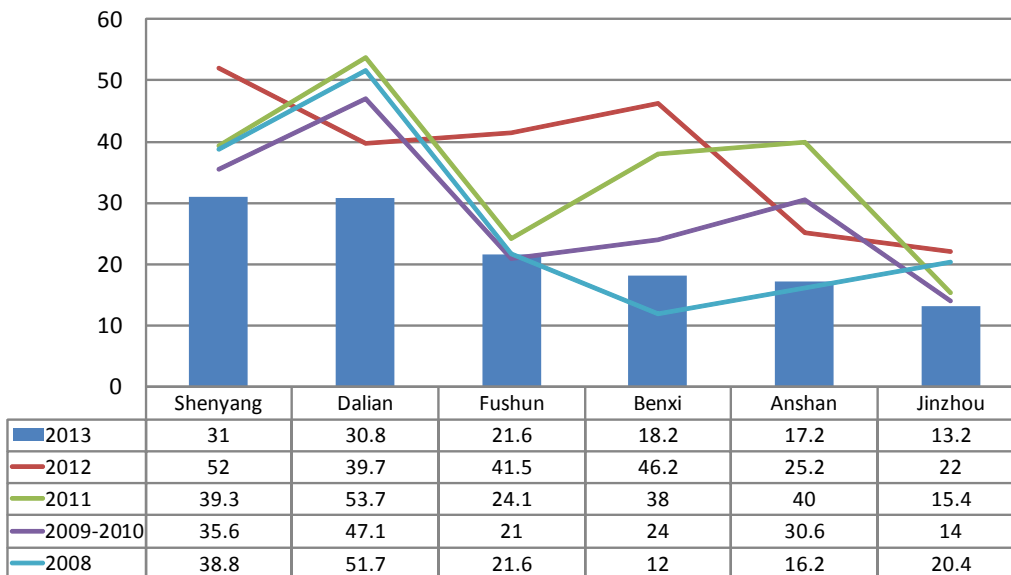
PITI Scores for Four Cities in Inner Mongolia: Five-Year Comparison

	Erdos	Baotou	Huhhot	Chifeng
2013	28.1	26.8	23.2	22.5
2012	22.6	27.4	26.3	30
2011	20.8	28.8	16.6	13.2
2009-2010	19	25.2	22	14.4
2008	18.2	14	19.4	24.1
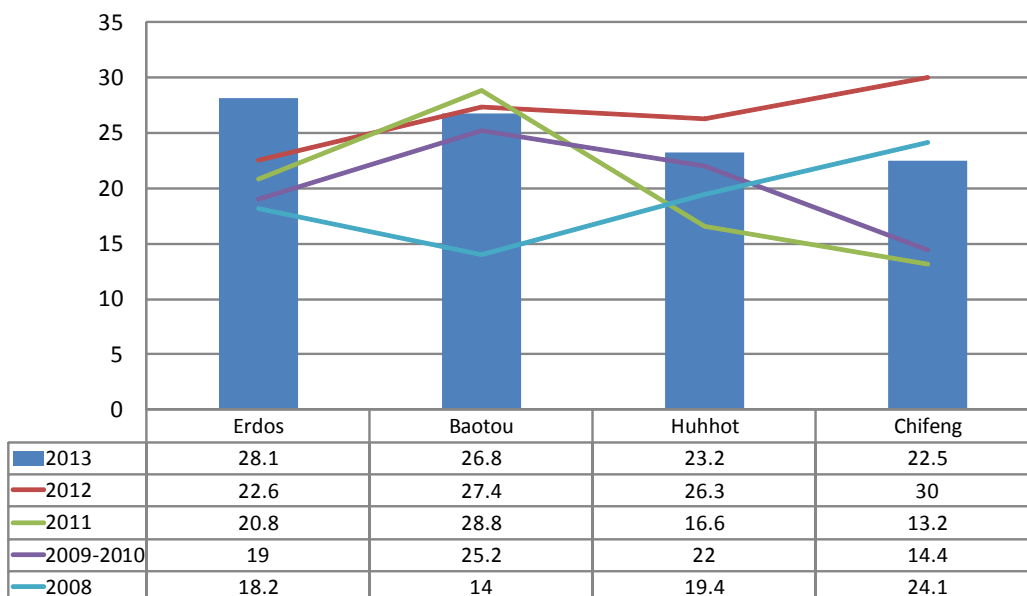
PITI Scores for Two Cities in Ningxia: Five-Year Comparison

	Yinchuan	Shizuishan
2013	27.9	20.2
2012	39.4	32.4
2011	53.7	36.2
2009-2010	37.6	19.4
2008	28.9	14.4
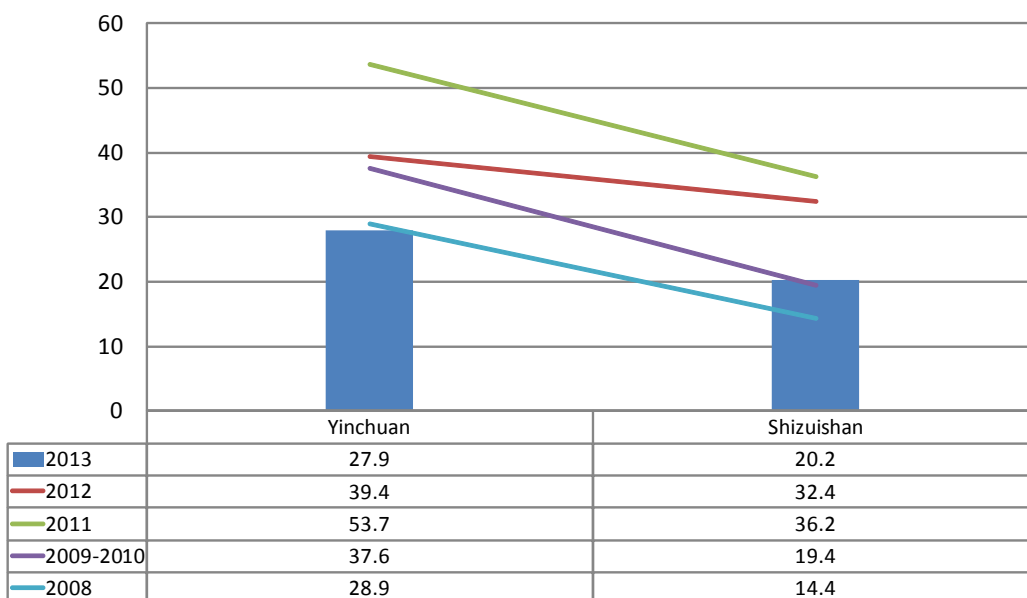
PITI Scores for Xining in Qinghai: Five-Year Comparison

	2013	2012	2011	2009-2010	2008
Xining	21.1	53.6	30.7	25	10.2
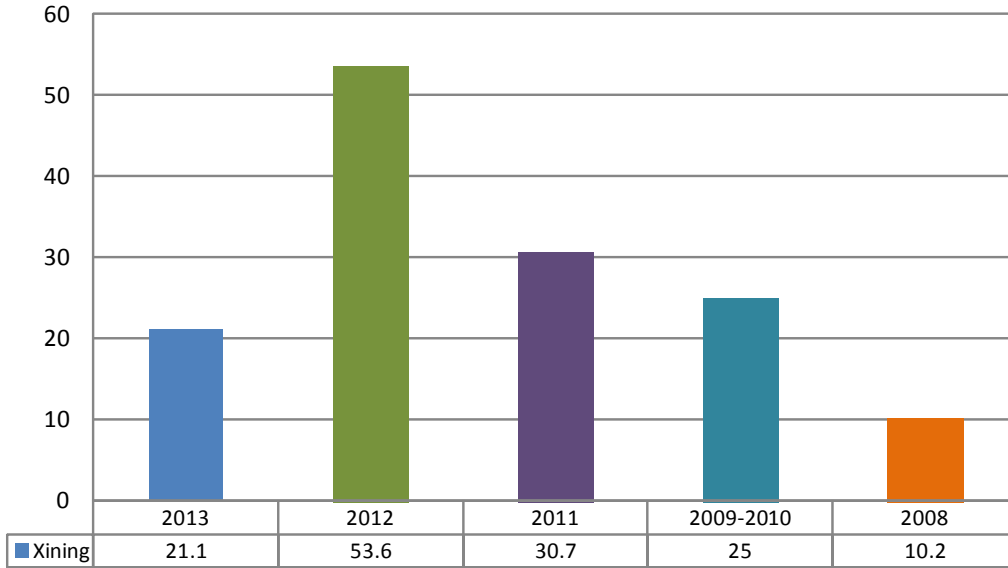
PITI Scores for Ten Cities in Shandong: Five-Year Comparison

	Qingdao	Yantai	Weifang	Ji'nan	Tai'an	Zaozhuang	Zibo	Rizhao	Jining	Weihai
2013	55.8	42.8	38.4	37.9	36.8	34.8	34.1	32	30.2	28
2012	74.4	51.3	24	38.7	25.6	12	40.2	39.1	24.2	42.7
2011	70.6	37.3	38.8	30	17.6	22.8	30.8	23.2	22.6	43.8
2009-2010	37.7	48.7	34.2	43.5	15.6	20.4	45.4	20.4	18.8	51.1
2008	38.4	44.5	22.2	36.2	15.6	18.6	46	22.3	17.8	45.4
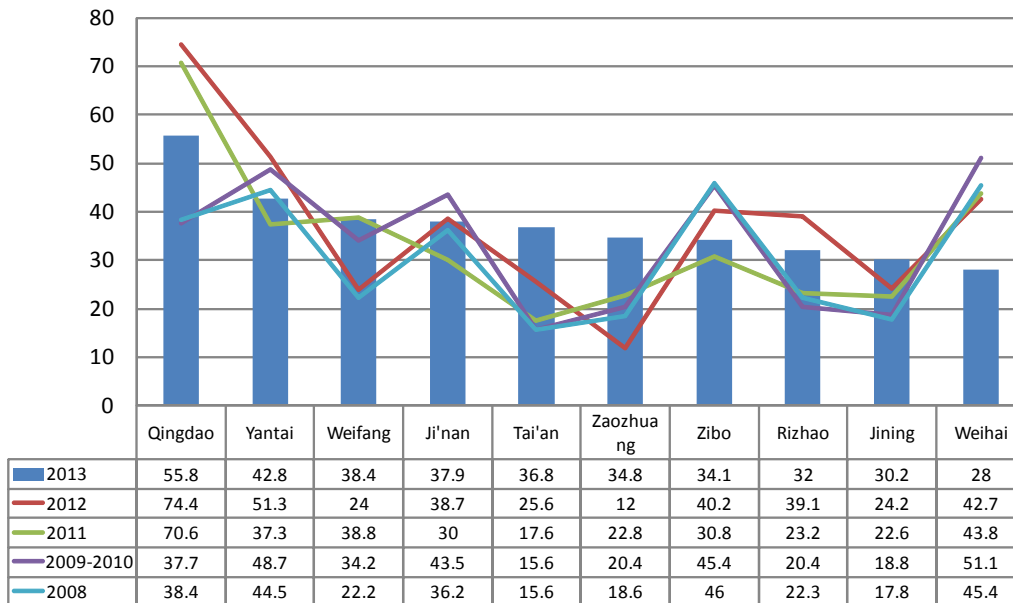
PITI Scores for Five Cities in Shanxi: Five-Year Comparison

	Changzhi	Taiyuan	Linfen	Yangquan	Datong
2013	23.8	23.4	13.6	8.4	8.3
2012	39.1	48.7	26.8	21.8	12.2
2011	51	48.3	22	26.7	20.4
2009-2010	30	40.8	17.2	19	29.4
2008	42.9	55.4	14	19	12.6
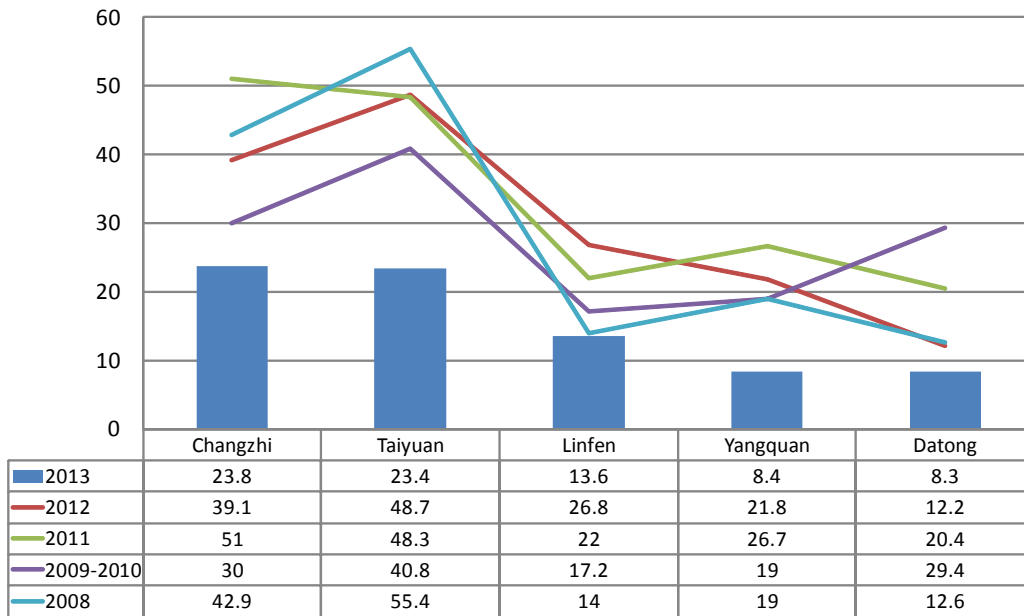
PITI Scores for Six Cities in Shaanxi: Five-Year Comparison

	Xianyang	Tongchuan	Yan'an	Xi'an	Baoji	Weinan
2013	23	18.6	23.2	29.2	28.2	23.4
2012	19	24.5	27.7	35.8	40	
2011	24.6	36.5	19	30.6	20.4	
2009-2010	21	23.7	25.6	31	24.4	
2008	23.3	25.4	18.8	25.4	14	
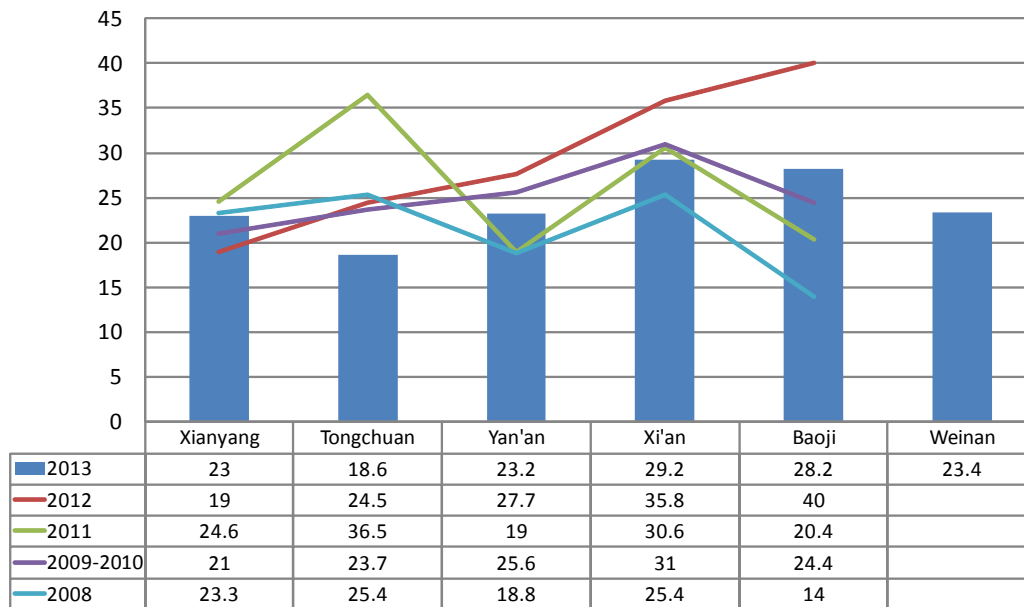
PITI Scores for Eight Cities in Sichuan: Five-Year Comparison

	Chengdu	Luzhou	Mianyang	Yibin	Panzhihua	Zigong	Nanchong	Deyang
2013	37.9	26.1	25.3	20.5	17.7	18.1	14.6	13
2012	47.8	33.1	50.8	23.6	30.6			
2011	36.7	31.4	14.8	18.3	21.2			
2009-2010	36.5	39.8	26.5	18.7	19.6			
2008	34.2	19.2	12.4	14.4	18			
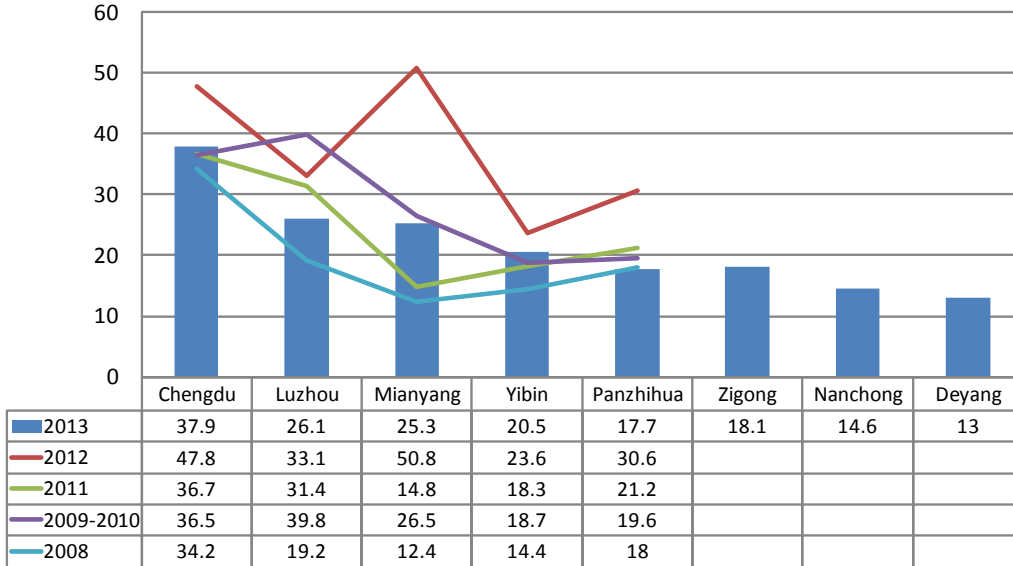
PITI Scores for Two Cities in Xinjiang: Five-Year Comparison

	Urumqi	Karamay
2013	23.4	21.4
2012	37.6	19
2011	35.8	18.4
2009-2010	37.9	14.8
2008	32.7	11.2
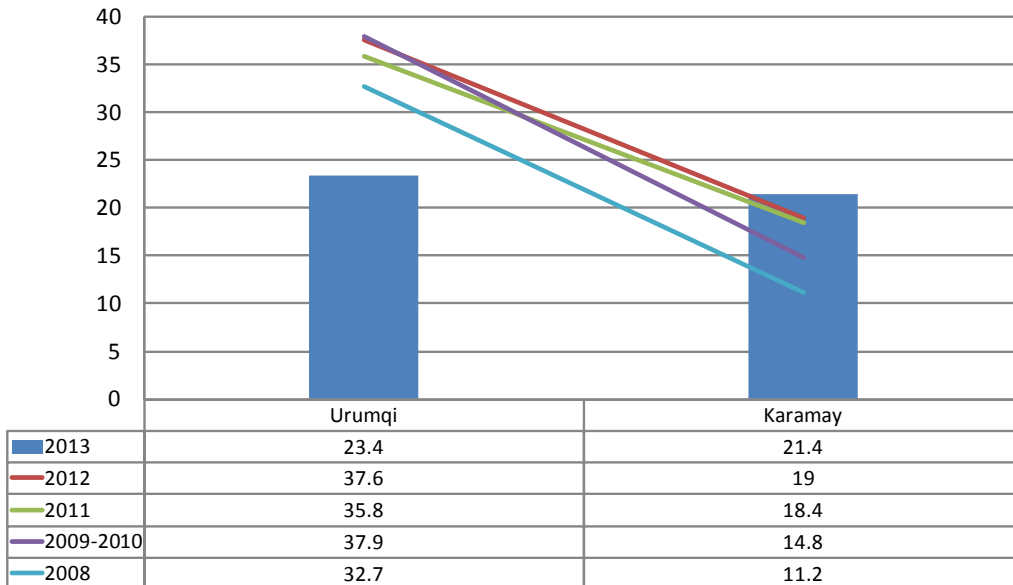
PITI Scores for Three Cities in Yunnan: Five-Year Comparison

	Qujing	Kunming	Yuxi
2013	15.3	13.8	9
2012	30.9	49.6	
2011	19	45	
2009-2010	18.9	34.6	
2008年	24.8	49.4	
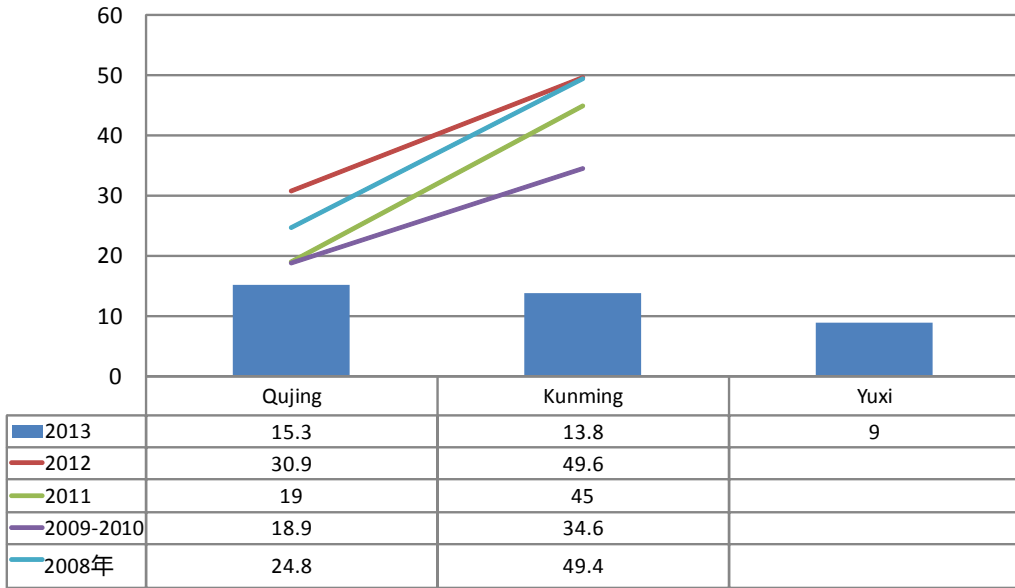
PITI Scores for Seven Cities in Zhejiang: Five-Year Comparison

	Ningbo	Wenzhou	Hangzhou	Taizhou	Shaoxing	Jiaxing	Huzhou
2013	65.9	53.2	53.1	43.4	38.3	38	32
2012	85.3	70.4	70.8	58.1	47.8	66.9	49.1
2011	83.7	72.7	60.2	75.4	50.1	49.4	40.9
2009-2010	82.1	56.5	36.8	66.6	49.8	54.5	28
2008	72.9	53.3	48	48.4	52.6	25.7	40.4
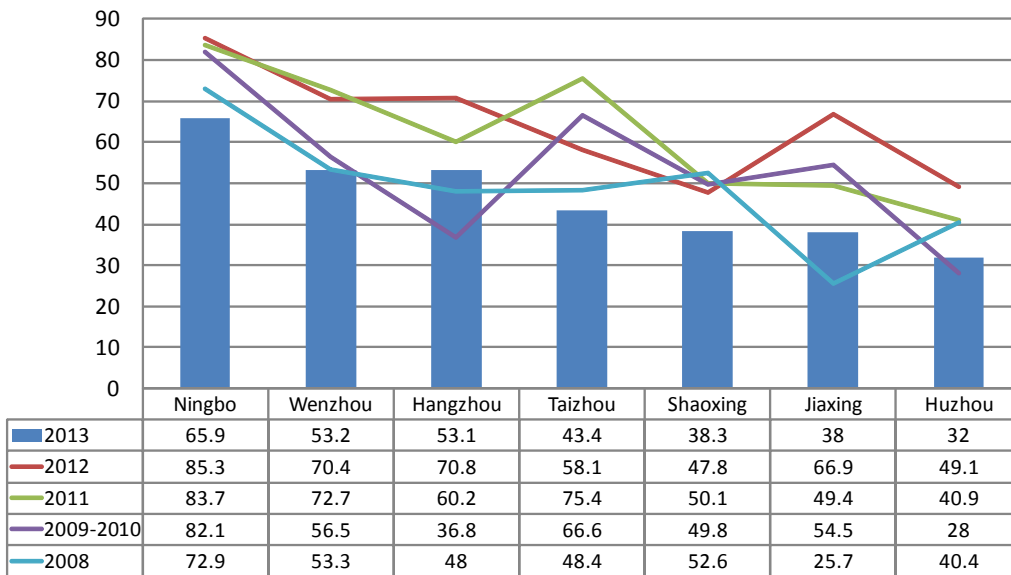
Appendix 4: PITI Scores from Assessments Conducted by Local Environmental Groups

2013-2014 PITI Scores of eight cities in Hunan Province

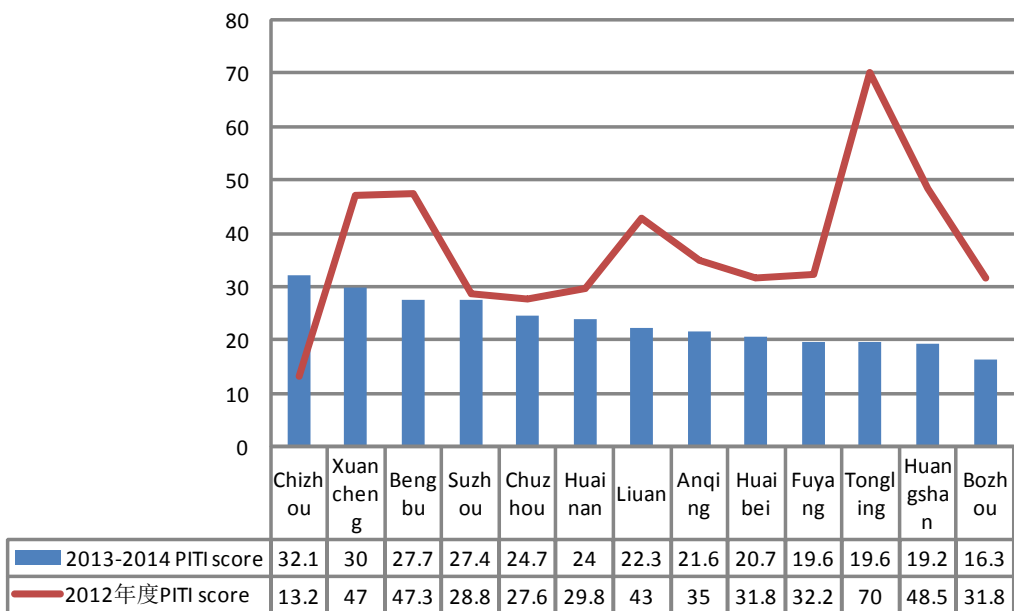|	Hengyang	Chenzhou	Xiangxi	Yiyang	Yongzhou	Shaoyang	Loudi	Huaihua
2013-2014 PITI score	25.8	21	20.8	20.4	16	15.6	15.2	12.8
2012 PITI score	45.4	24.2	37.5	20.6	28.1	12.4	15.8	25.2
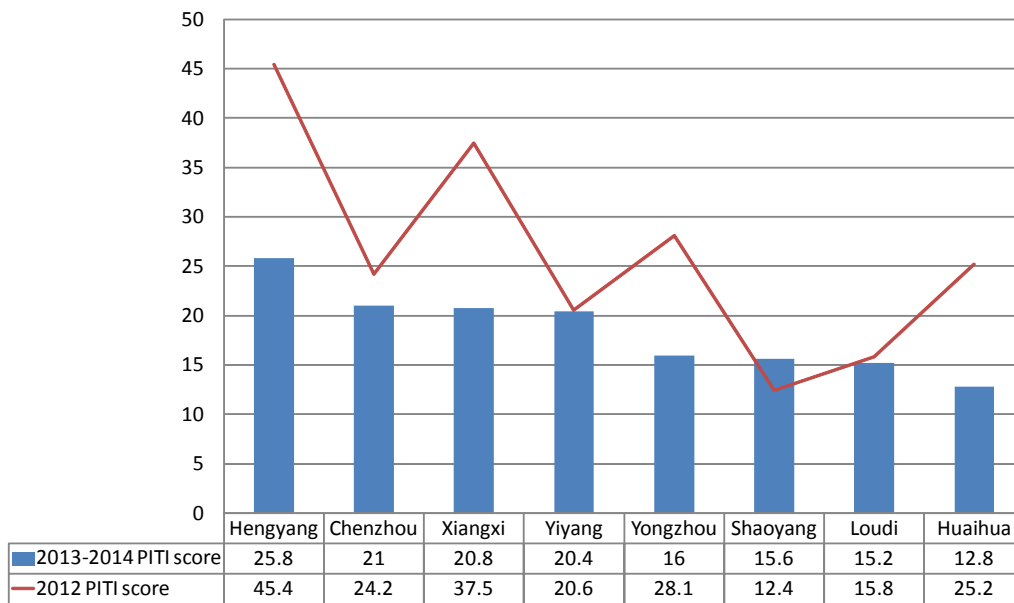
PITI score comparison of thirteen cities in Anhui Province

	Chizhou	Xuancheng	Bengbu	Suzhou	Chuzhou	Huainan	Liuan	Anqing	Huaibei	Fuyang	Tongling	Huangshan	Bozhou
2013-2014 PITI score	32.1	30	27.7	27.4	24.7	24	22.3	21.6	20.7	19.6	19.6	19.2	16.3
2012年度PITI score	13.2	47	47.3	28.8	27.6	29.8	43	35	31.8	32.2	70	48.5	31.8

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2013-2014 PITI scores of eight cities in Shandong Province

	Dongying	Linyi	Laiwu	Dezhou	Weihai	Binzhou	Liaocheng	Heze
■ 2013-2014 PITI score	35.8	34.6	34.2	31.2	31.2	30	28.8	23