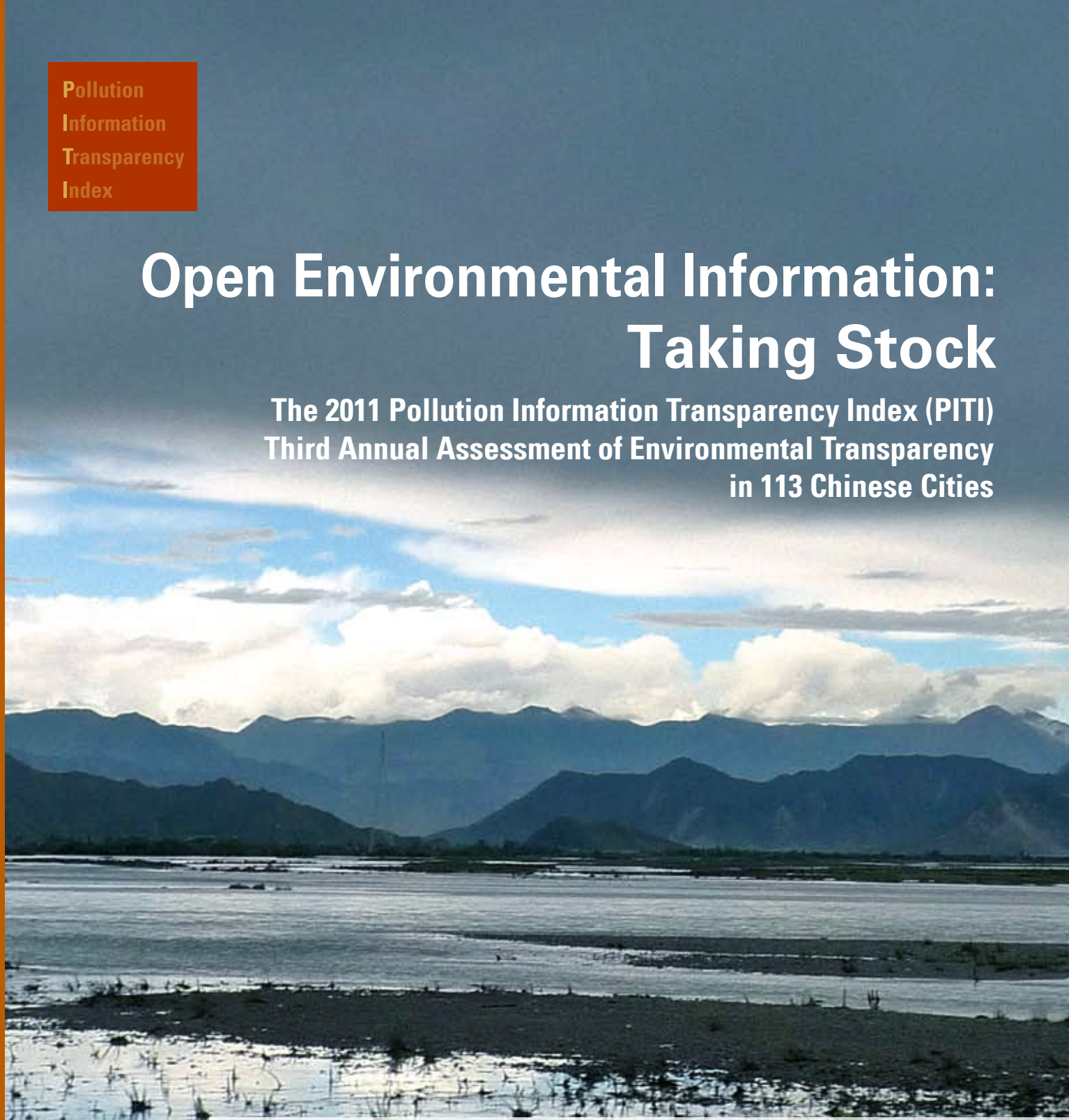
Pollution
Information
Transparency
Index

Open Environmental Information: Taking Stock

The 2011 Pollution Information Transparency Index (PITI)
Third Annual Assessment of Environmental Transparency in 113 Chinese Cities



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Institute of Public & Environmental Affairs (IPE)

The Institute of Public & Environmental Affairs (IPE) is a registered non-profit organization based in Beijing. Since its establishment in May 2006, IPE has developed the China Pollution Map Database (www.ipe.org.cn), to monitor corporate environmental performance and to facilitate public participation in environmental governance. (www.ipe.org.cn)

Natural Resources Defense Council (NRDC)

The Natural Resources Defense Council (NRDC) is a non-profit environmental organization with more than 1.3 million members. Since 1970, NRDC lawyers, scientists, and other environmental specialists have worked to protect the world's natural resources, public health, and environment.

NRDC has offices in New York, Washington, D.C., Los Angeles, San Francisco, Chicago, Montana, and Beijing. (www.nrdc.cn)

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Executive Summary

The State Council "Regulation of the People's Republic of China on Open Government Information" and the Ministry of Environmental Protection "Measures on Open Environmental Information (Trial)" entered into effect on 1 May 2008. In 2009, the Institute of Public & Environmental Affairs (IPE) and the Natural Resources Defense Council (NRDC) jointly developed the Pollution Information Transparency Index (PITI) to make a practical annual assessment of the effectiveness of the above-referenced open environmental information measures in 113 cities.

The 2008 PITI assessment determined the baseline level of open environmental information in the cities indexed. The 2009-2010 assessment showed a marked improvement in the overall availability of environmental information. In 2011, the assessment confirmed that certain prescribed environmental information continues to be increasingly open to the public. Based on the assessments conducted over the past three years, it is reasonable to conclude that open environmental information has been established at an initial stage in China.

The 2011 PITI results also show that the previous level of open environmental information, being high in the east and low in the west of the country, has not changed, with the gap actually widening. In some areas we have seen significant breakthroughs; for example, in eastern cities in Guangdong, Jiangsu, and Zhejiang Provinces, as well as Beijing and Shanghai. A common feature of the breakthroughs is that information about government enforcement activity (e.g. related to: non-compliance, violations, and accidents) against polluters has become more open. At the same time, however, some provinces and areas with high concentrations of large polluters, such as Shandong, Inner Mongolia, Sichuan, Henan and Hunan, have still made little progress and others have even regressed.

International experience has shown that open environmental information can put pressure on companies to voluntarily reduce emissions. As of 31 December 2011, a total of 548 companies had been in contact with the environmental NGOs in response to their environmental violation records. In 2011 alone, 218 companies provided explanations regarding their pollution issues and described the corrective measures that they had taken. These activities show that China's open environmental information measures have already started to push companies to re-think their environmental responsibilities and, further, that continued expansion of open environmental information can lead to a reduction in energy consumption and emissions discharge and can even bring about economic transformation.

An important development in the 2011 PITI comes from the environmental NGO, Green Hunan, which used the PITI to develop open environmental information assessments of prefecture-level cities in Hunan Province. Through joint research, environmental protection NGOs have, for the first time, been able to make an accurate, standardized assessment of the level of open environmental information for all prefecture-level cities in a given province. This increased depth of assessment eliminates a blind spot in the national scope of environmental information and drives public participation in open environmental information by encouraging local NGOs to get involved.

Key Findings:

The key findings of the 2011 PITI are as follows:

- Open environmental information has been established at an initial stage in China.
- Open environmental information has made breakthroughs in some regions. And yet, other regions, often ones with serious polluters, have regressed.
- Open environmental information has already started to put pressure on enterprises discharging pollution. Nonetheless, a pollutant discharge registry system needs to be established in China.

Methodology:

The 2011 PITI assessment methodology is the same as that of the 2009-2010 PITI. For details, see Appendix 1.

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Part 1 Assessment Results and Analysis

2011 PITI Assessment Results for 113 Cities

Figure 1: 2011 PITI Final Rankings for 113 Cities

Rank	City	Total 2011 PITI Score	Change	Rank	City	Total 2011 PITI Score	Change	Rank	City	Total 2011 PITI Score	Change
1	Ningbo	83.7	Unchanged	39	Beihai	45.3	Up	77	Baotou	28.8	Up
2	Shenzhen	83.3	Up	40	Kunming	45	Up	78	Pingdingshan	28.4	Up
3	Changzhou	76.8	Up	41	Weihai	43.8	Down	79	Lianyungang	27.9	Up
4	Zhongshan	76	Up	42	Guilin	43.2	Up	80	Changsha	27.5	Up
5	Taizhou	75.4	Up	43	Guiyang	43.2	Up	81	Yangquan	26.7	Up
6	Foshan	74.6	Up	44	Jiaozuo	42.9	Up	82	Anyang	26.3	Up
7	Beijing	72.9	Up	45	Yancheng	41.3	Up	83	Nanchang	26	Up
8	Wenzhou	72.7	Up	46	Huzhou	40.9	Up	84	Shaoguan	25.6	Up
9	Dongguan	72.1	Up	47	Changde	40.4	Up	85	Zhuzhou	25.2	Up
10	Qingdao	70.6	Up	48	Anshan	40	Up	86	Xianyang	24.6	Up
11	Shanghai	68.8	Unchanged	49	Xiangtan	39.6	Up	87	Fushun	24.1	Up
12	Fuzhou	68.1	Up	50	Zhuhai	39.4	Unchanged	88	Qinhuangdao	24	Up
13	Chongqing	67.1	Up	51	Shenyang	39.3	Up	89	Rizhao	23.2	Unchanged
14	Nantong	63.1	Unchanged	52	Jingzhou	39.2	Unchanged	90	Changchun	23.2	Unchanged
15	Nanjing	62.7	Up	53	Daqing	39.1	Unchanged	91	Zaozhuang	22.8	Unchanged
16	Guangzhou	61.2	Up	54	Zhanjiang	39	Up	92	Jining	22.6	Unchanged
17	Wuxi	60.3	Up	55	Weifang	38.8	Up	93	Yueyang	22.2	Unchanged
18	Hangzhou	60.2	Up	56	Zhengzhou	38.4	Down	94	Linfen	22	Unchanged
19	Suzhou	60.1	Unchanged	57	Benxi	38	Up	95	Qiqiha'er	21.6	Unchanged
20	Quanzhou	58.4	Down	58	Yantai	37.3	Down	96	Panzhihua	21.2	Unchanged
21	Ma'anshan	57.1	Up	59	Chengdu	36.7	Unchanged	97	Erdos	20.8	Unchanged
22	Shantou	56.7	Up	60	Tongchuan	36.5	Up	98	Jilin	20.8	Unchanged
23	Wuhan	56	Up	61	Shizuishan	36.2	Up	99	Jiujiang	20.8	Unchanged
24	Luoyang	55.8	Up	62	Urumqi	35.8	Unchanged	100	Baoji	20.4	Unchanged
25	Nanning	55.8	Up	63	Xuzhou	35.3	Unchanged	101	Datong	20.4	Unchanged
26	Hefei	55.2	Unchanged	64	Tangshan	34.7	Down	102	Jinchang	19.6	Unchanged
27	Shijiazhuang	55	Up	65	Handan	34	Unchanged	103	Yan'an	19	Down
28	Yichang	54.7	Unchanged	66	Harbin	32.6	Down	104	Qujing	19	Down
29	Yinchuan	53.7	Up	67	Lanzhou	32.6	Unchanged	105	Karamay	18.4	Down
30	Dalian	53.7	Up	68	Liuzhou	32.3	Up	106	Yibin	18.3	Down
31	Changzhi	51	Up	69	Luzhou	31.4	Down	107	Tai'an	17.6	Down
32	Shaoxing	50.1	Unchanged	70	Zibo	30.8	Down	108	Hohhot	16.6	Down
33	Tianjin	50	Up	71	Xining	30.7	Up	109	Zhangjiajie	15.6	Down
34	Mudanjiang	49.7	Up	72	Wuhu	30.6	Down	110	Jinzhou	15.4	Down
35	Jiaxing	49.4	Down	73	Xi'an	30.6	Unchanged	111	Mianyang	14.8	Down
36	Baoding	49.2	Up	74	Jinan	30	Down	112	Zunyi	13.4	Down
37	Taiyuan	48.3	Up	75	Xiamen	29.4	Down	113	Chifeng	13.2	Down
38	Yangzhou	45.4	Down	76	Kaifeng	29.1	Up				

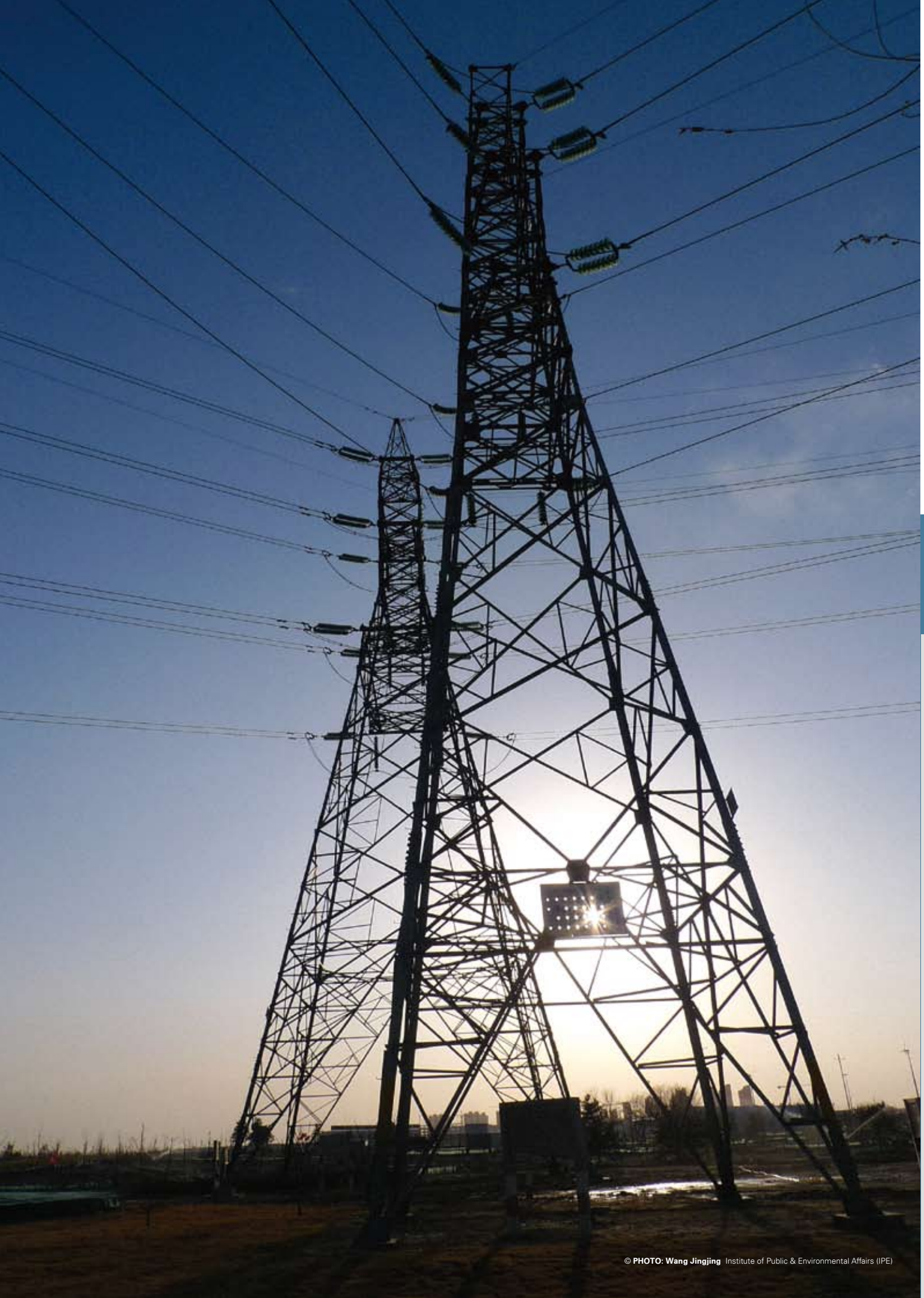

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Figure 2: 2011 Sub-Scores of the Eight PITI Assessment Metrics for All 113 Cities

Rank	City	Total PITI Score (100 points)	Records of Enterprise Violations (28 points)	Results of Enforcement Campaigns against Polluting Enterprises (8 points)	Clean Production Audit Information (8 points)	Enterprise Environmental Performance Ratings (8 points)	Verified Petitions and Complaints (18 points)	EIA Reports and Project Completion Approvals (8 points)	Discharge Fee Data (4 points)	Public Information Requests (18 points)
1	Ningbo	83.7	28	4.6	3.6	1.6	16.9	7.6	3.4	18
2	Shenzhen	83.3	27	5.2	4	5.8	16.9	6.4	0	18
3	Changzhou	76.8	18	6	8	5.6	10.8	7.2	3.2	18
4	Zhongshan	76	24.2	4.8	4	3.6	15	3.2	3.2	18
5	Taizhou	75.4	22.8	6.2	3.2	3.6	16.2	5.2	0.2	18
6	Foshan	74.6	25.1	4.2	4	4	16.1	3.2	0	18
7	Beijing	72.9	24.2	4.8	0	1.6	16.1	5.2	3	18
8	Wenzhou	72.7	22	4.6	3.2	5.6	13.3	6.8	0	17.2
9	Dongguan	72.1	18.2	5.2	4	3.4	16.1	4	3.2	18
10	Qingdao	70.6	22.4	3.2	3.2	0	16.2	4.4	3.2	18
11	Shanghai	68.8	24.1	4	4	1.6	11.5	2.8	3.4	17.4
12	Fuzhou	68.1	22.4	5.8	3.2	0	16.9	1.6	0.2	18
13	Chongqing	67.1	13	2.4	5.6	1.6	16.9	6.4	3.2	18
14	Nantong	63.1	14.9	4.8	2.4	1.6	12.2	7.2	2	18
15	Nanjing	62.7	10.8	5.8	4	3.6	16.5	2.8	2	17.2
16	Guangzhou	61.2	16.8	5.8	3.2	2.6	7.2	6.8	3.2	15.6
17	Wuxi	60.3	12.7	4.8	4.8	3.4	10.8	5.6	0.2	18
18	Hangzhou	60.2	9.3	6.6	3.2	4.2	10.1	6.4	2.4	18
19	Suzhou	60.1	11.2	5.8	2.4	2.6	16.9	0	3.2	18
20	Quanzhou	58.4	19	5.8	3.2	4.6	15.4	2.8	0	7.6
21	Ma'anshan	57.1	8.2	6.2	3.2	1.6	16.9	0	3	18
22	Shantou	56.7	19.1	4	4	0	15.4	1.6	3.4	9.2
23	Wuhan	56	5.6	6.4	4.4	0	15.4	2.4	3.8	18
24	Luoyang	55.8	10.1	4.8	4.4	0	16.9	1.6	0	18
25	Nanning	55.8	11.2	7	5.2	0	8.6	2.4	3.4	18
26	Hefei	55.2	5.6	5.2	4	0	16.2	2.8	3.4	18
27	Shijiazhuang	55	16.8	4.6	0	3.2	16.2	2.8	2.6	8.8
28	Yichang	54.7	5.6	4	4.4	0	16.1	3.2	3.4	18
29	Yinchuan	53.7	23.1	6	3.2	0	14.4	1.2	3.4	2.4
30	Dalian	53.7	5.6	6.4	4	0	16.9	2.4	2.8	15.6
31	Changzhi	51	8.2	5.2	3.2	1.6	10.8	1.6	2.4	18
32	Shaoxing	50.1	14.9	1.6	3.2	0	14.4	6.4	3.6	6
33	Tianjin	50	5.6	4.8	0	1.6	16.2	0.4	3.4	18
34	Mudanjiang	49.7	5.6	3.2	4	0	16.9	1.6	2	16.4
35	Jiaxing	49.4	13	3.4	3.2	1.6	3.6	6.4	0.2	18
36	Baoding	49.2	5.6	5.8	3.6	3.2	12.2	1.6	0	17.2
37	Taiyuan	48.3	15.3	4.4	3.2	1.6	16.2	1.6	2.6	3.4
38	Yangzhou	45.4	5.6	5.8	4	3.2	16.2	3.2	3.4	4
39	Beihai	45.3	5.6	5.8	6.4	0	16.9	6.4	0	4.2
40	Kunming	45	5.6	4.8	3.6	0	10.8	3.6	0	16.6
41	Weihai	43.8	11.2	1.6	3.2	0	15.4	1.6	0	10.8
42	Guiyang	43.2	5.6	4.6	4	0	6.4	2.8	1.8	18
43	Guilin	43.2	5.6	3.4	5.2	0	3.6	6.4	3.4	15.6
44	Jiaozuo	42.9	5.6	4.8	3.2	0	16.9	0	2.8	9.6
45	Yancheng	41.3	9.3	4	2.4	1.6	7.2	1.6	0	15.2
46	Huzhou	40.9	9.3	6.4	3.2	1.6	0	4	0	16.4
47	Changde	40.4	5.6	4	3.2	0	14.4	1.6	0	11.6
48	Anshan	40	5.6	4.8	3.2	0	7.2	2.8	0	16.4
49	Xiangtan	39.6	5.6	4.8	3.2	0	14.4	2.4	0	9.2
50	Zhuhai	39.4	5.6	4	4	0	7.2	5.6	3.2	9.8
51	Shenyang	39.3	5.6	3.2	4.4	0	15.5	2.4	0	8.2
52	Jingzhou	39.2	5.6	4.8	3.6	0	15.4	2.4	3.4	4
53	Daqing	39.1	11.2	4.2	7.2	0	6.5	2.4	3.4	4.2
54	Zhanjiang	39	5.6	3.2	3.2	3.2	14.4	5.2	0	4.2

55	Weifang	38.8	9.3	5.8	3.2	0	10.1	1.6	0	8.8
56	Zhengzhou	38.4	5.6	6	4	0	14.4	1.6	1.8	5
57	Benxi	38	5.6	2.4	3.2	0	7.2	1.6	1.6	16.4
58	Yantai	37.3	5.6	4	3.2	0	16.1	1.6	3.4	3.4
59	Chengdu	36.7	5.6	5.8	0	0	14.3	6.8	0	4.2
60	Tongchuan	36.5	19.1	6.4	3.2	0	3.6	1.6	0	2.6
61	Shizuishan	36.2	8.2	5.8	3.2	0	16.2	2.8	0	0
62	Urumqi	35.8	8.2	4.8	3.2	0	3.6	2	0	14
63	Xuzhou	35.3	5.6	4	4.4	2.4	10.1	2.8	2	4
64	Tangshan	34.7	5.6	4.6	0	2.4	16.1	1.6	0	4.4
65	Handan	34	5.6	6	0	3.2	14.4	1.6	0	3.2
66	Harbin	32.6	5.6	0	4	0	15.4	1.6	3.4	2.6
67	Lanzhou	32.6	5.6	6	3.6	0	7.2	2.8	3.4	4
68	Liuzhou	32.3	5.6	5.2	5.2	0	6.5	2.8	3	4
69	Luzhou	31.4	10.1	6.4	0	0	6.5	2.8	3.2	2.4
70	Zibo	30.8	5.6	5.8	4.4	0	10.8	0	0	4.2
71	Xining	30.7	12.7	4.2	3.2	0	7.2	2.4	0	1
72	Wuhu	30.6	5.6	0	3.2	0	16.2	2.4	0	3.2
73	Xi'an	30.6	5.6	4	3.6	0	10.8	2.4	0	4.2
74	Jinan	30	5.6	5.2	3.2	0	3.6	1.6	3.2	7.6
75	Xiamen	29.4	5.6	4.6	3.2	0	7.2	1.6	3.2	4
76	Kaifeng	29.1	11.9	5.8	3.2	0	3.6	1.6	1.4	1.6
77	Baotou	28.8	5.6	1.6	3.6	0	0	1.6	0	16.4
78	Pingdingshan	28.4	5.6	7	3.2	2.4	3.6	1.6	0	5
79	Lianyungang	27.9	10.1	4.8	3.6	1.6	0	3.2	1.4	3.2
80	Changsha	27.5	8.2	4	3.2	0	6.5	0	1.8	3.8
81	Yangquan	26.7	9.3	6	3.6	0	3.6	0	3.2	1
82	Anyang	26.3	5.6	4.8	3.2	0	6.5	0.8	1.4	4
83	Nanchang	26	5.6	4.6	0	0	3.6	4	3.2	5
84	Shaoguan	25.6	5.6	1.6	3.2	2.4	0	6.8	2	4
85	Zhuzhou	25.2	5.6	1.6	3.2	0	10.8	0	0	4
86	Xianyang	24.6	5.6	5.8	4.4	0	3.6	1.2	0	4
87	Fushun	24.1	9.3	1.6	3.6	0	7.2	2.4	0	0
88	Qinhuangdao	24	5.6	5.8	0	4.2	0	2.8	3.2	2.4
89	Rizhao	23.2	5.6	0	3.2	0	7.2	1.6	1.6	4
90	Changchun	23.2	5.6	6.4	3.2	0	7.2	0	0	0.8
91	Zaozhuang	22.8	5.6	4.6	3.2	0	3.6	1.6	0	4.2
92	Jining	22.6	5.6	5.8	3.2	0	3.6	2	0	2.4
93	Yueyang	22.2	5.6	0	3.2	0	3.6	3	2.8	4
94	Linfen	22	8.2	4.2	3.2	0	0	1.6	3.2	1.6
95	Qiqiha'er	21.6	8.2	4.6	3.6	0	0	1.6	0	3.6
96	Panzhihua	21.2	5.6	5.2	0	0	3.6	2.8	0	4
97	Erdos	20.8	5.6	0	3.2	0	3.6	4.8	0	3.6
98	Jilin	20.8	5.6	0	3.2	0	7.2	1.6	1.6	1.6
99	Jiujiang	20.8	1.6	3.6	0	0	3.6	2.8	0	9.2
100	Baoji	20.4	5.6	4.2	4.4	0	3.6	0	0	2.6
101	Datong	20.4	5.6	4.8	3.2	1.6	0	0	3.6	1.6
102	Jinchang	19.6	8.2	4.6	3.2	0	3.6	0	0	0
103	Yan'an	19	5.6	4.2	5.2	0	0	2.4	0	1.6
104	Qujing	19	5.6	3.8	3.6	0	3.6	0	0	2.4
105	Karamay	18.4	5.6	3.8	3.2	0	1	0.8	0	4
106	Yibin	18.3	5.6	6.2	0	0	6.5	0	0	0
107	Tai'an	17.6	5.6	4.8	3.2	0	0	0	0	4
108	Hohhot	16.6	5.6	1.6	4.4	0	0	0	0	5
109	Zhangjiajie	15.6	5.6	0	3.2	0	3.6	0	0	3.2
110	Jinzhou	15.4	1.6	0	5.6	0	7.2	0	0	1
111	Mianyang	14.8	5.6	0	0	0	3.6	2.4	0	3.2
112	Zunyi	13.4	5.6	3.2	0	0	3.6	0	0	1
113	Chifeng	13.2	5.6	0	3.6	0	0	0	0	4

Main Findings from the 2011 Assessment

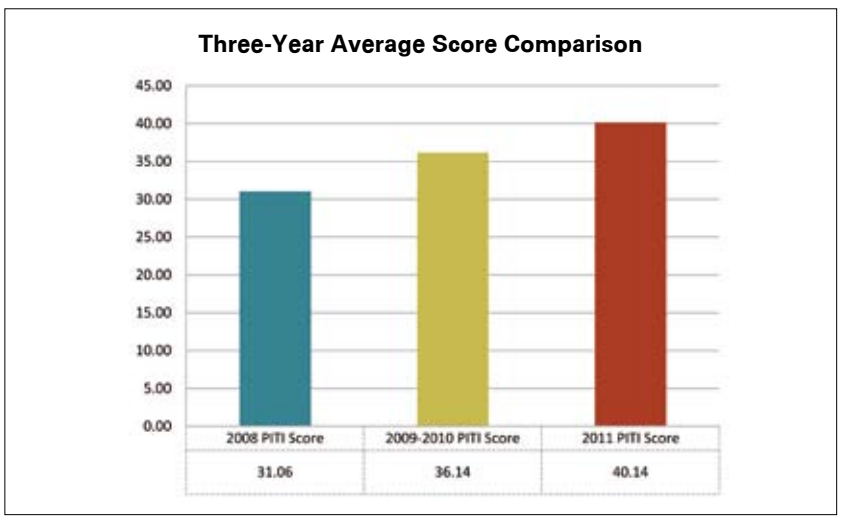
I. Open environmental information has been established at an initial stage in China.

A. A review of three years of PITI assessment results supports the proposition that China's open environmental information has been initially established. Chief among the support for this proposition are the following points:

1. Over the past three years, the average PITI score for the 113 cities has steadily increased.

The average PITI score for the 113 cities annually assessed has reached 40.14, which is 4 points higher than the 2009-2010 score and 9.08 points higher than the 2008 score.

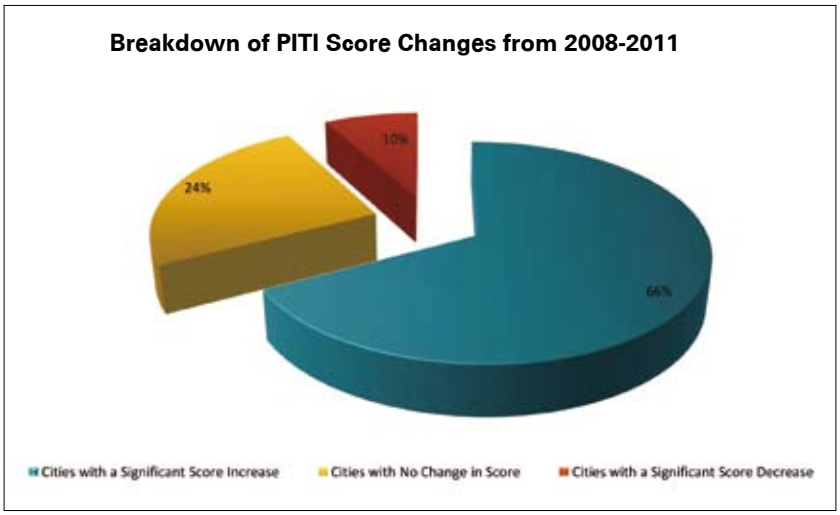
Figure 3: PITI Three-Year Average Score Comparison



2. 45.13% of the 113 cities have seen their scores rise continuously over the past two years

Since 2008, there has been a significant score increase for 75 cities.

Figure 4: Breakdown of PITI Score Changes from 2008 - 2011



Note: A significant score increase is defined as an increase of three or more points. No change is defined as any score shift less than three points. A significant score decrease is defined as a decrease of three or more points.

Scores for 58 cities were significantly higher in 2011 than they were in 2009-2010. The following ten cities had the most significant score increases:

Figure 5: 10 Cities with the Most Significant Score Increases in 2011

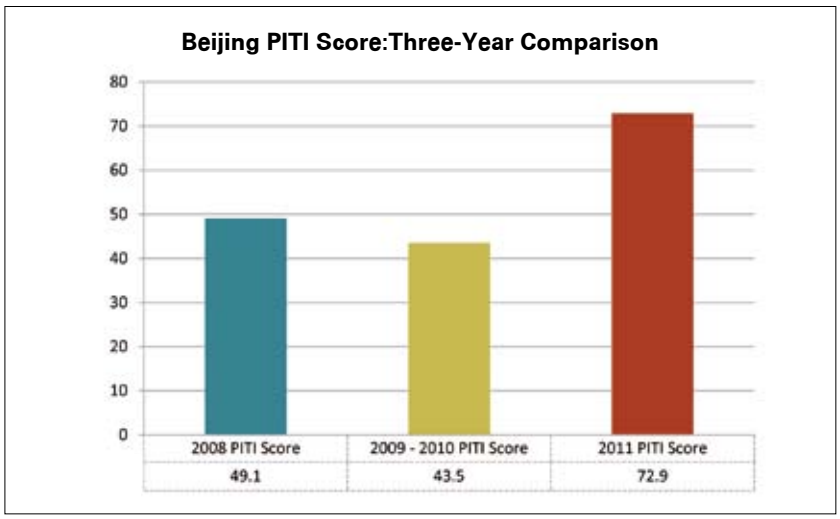
City	Total PITI Score (2011)	Total PITI Score (2009 - 2010)	Point Increase
Qingdao	70.6	37.7	32.9
Beijing	72.9	43.5	29.4
Tianjin	50	26.2	23.8
Hangzhou	60.2	36.8	23.4
Changzhi	51	30	21
Guiyang	43.2	22.4	20.8
Shijiazhuang	55	34.2	20.8
Mudanjiang	49.7	30.4	19.3
Xiangtan	39.6	20.4	19.2
Nanning	55.8	36.9	18.9

Case Study: Beijing

In 2011, Beijing scored 72.9 points in the PITI assessment, an increase of 29.4 points from the municipality's 2009 score, making it the second largest score increase.

Over the past three years, Beijing's PITI score has fluctuated. In 2008, a series of control measures were introduced in preparation for the Olympic Games, giving Beijing a PITI score of 49.1 points and placing it in 17th place. For the 2009-2010 assessment period, Beijing only published 9 supervision records, significantly less than in 2008, which accounts for its slip in rank to 31st place.

Figure 6: Beijing PITI Score: Three-Year Comparison



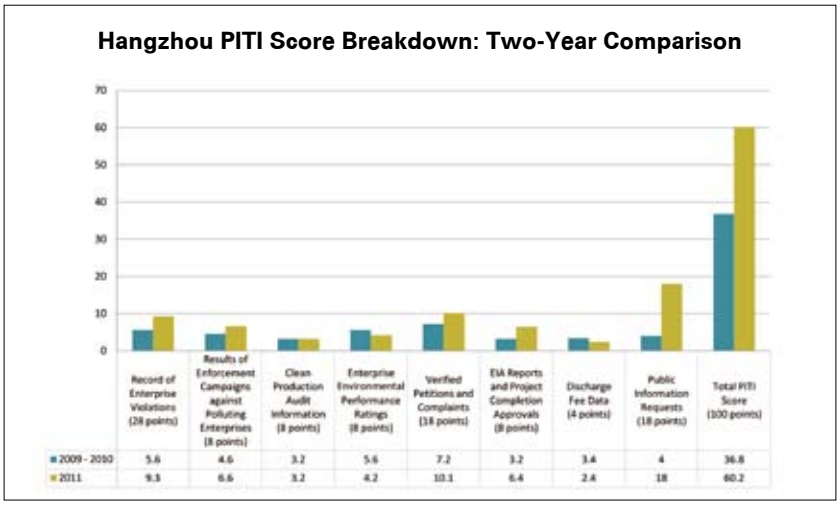
In 2010, Beijing set up a special "Administrative Penalty" section on their website. A list of companies with environmental administrative penalties for the previous month was published on a monthly basis. This page clearly shows a list of non-compliant company names and states the nature of the violation and the penalty period. In the 2011 PITI, which assesses the 2010 time period, Beijing published 419 regular supervision records, which was 47.78 times the number published in the 2009 period, giving it the largest increase for this criterion of all 113 cities.[1]

[1] It must be taken into account that the Beijing Municipality "Administrative Penalty" section has not been updated for the last two months. It stopped in October 2011 with the publication of the September list of administrative penalties.

Figure 7: Image of the Beijing Municipality Environmental Protection Bureau Administrative Penalties Page (Image Source: http://www.bjepb.gov.cn/portal0/tab152/, Downloaded: December 2011).

Case Study: Hangzhou City

Figure 8: Hangzhou PITI Score Breakdown: Two-Year Comparison



Hangzhou's 2011 PITI score was more than 60 points, 23.4 points higher than in 2009, meaning it had the fourth most significant point-increase of the 113 cities.

Apart from public information requests, Hangzhou has made great progress with open environmental information on enterprises' supervision records and enforcement campaigns against polluting enterprises. As to the publication of regular supervision records, for the 2009-2010 assessment, only 60 violation

records for enterprises breaching authorized standards could be found. For the 2011 assessment period, this number increased to 231 records.

As to enforcement campaigns against polluting enterprises, Hangzhou's dedicated waste gas inspections proved quite effective. According to documents from the Hangzhou Environmental Protection Bureau (HEPB), owing to "the high number of complaint letters over a prolonged time regarding industrial waste gas, the public were very concerned with the problem." From 17 – 30 December 2010, HEPB conducted special enforcement inspections of waste gas across the entire city. The inspection results for the special action were announced daily, and in full, on the "Special Topic Section" of the HEPB website. The information included the name of the enterprise, the waste gas category, odor monitoring status, sulfur dioxide monitoring status, treatment facilities operating status, problems discovered during on-site inspections, whether the enterprise was registered and how they dealt with complaints. A systematic, timely, and comprehensive system is necessary to facilitate open environmental information. Of the 113 cities indexed, only Hangzhou had such a system.

Figure 9: HEPB "2010 Three Quarters Municipal, District (County) Two-Level Cross Check Investigation Bulletin," (Image Source: http://www.hzepb.gov.cn/zwxx/hjjc/jcdt/201009/t20100921_6283.htm, Downloaded: 10 January 2012.)

2010年12月30日大气污染专项执法情况通报

12月29日晚至30日，是全市大气污染整治专项执法检查全面展开的第十四天，我局共出动监察人员168余人次，检查青山区、余杭区和拱墅区企业13家，其中立案调查3家（浙江百合花集团有限公司（老厂区）、杭州锦盛集团有限公司和杭州余杭禾丰印花厂），上述企业存在不正常使用大气污染物处理设施、未按环境要求setting添加碱液致使污染物超标排放，脱硫除尘吸收塘漏排外环境及未按规定设置采样口等问题，监察人员现场责令相关企业进行立案查处，并要求企业进一步加强环境监管，落实环保整改，确保污染物达标排放。具体情况见通报附件。

附件

12月30日执法检查情况汇总表

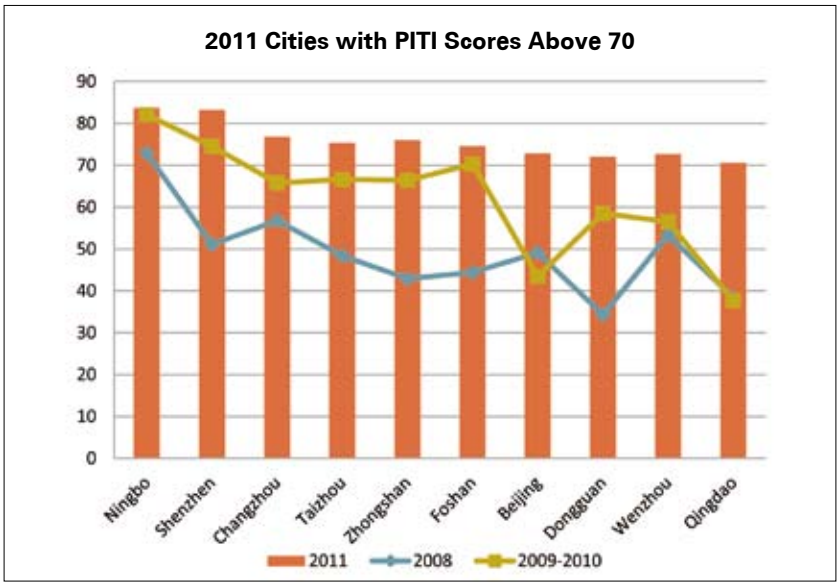
序号	企业名称	地址	废气类型	恶臭监测情况	二氧化硫监测情况	处理设施运行情况	现场检查发现问题	是否立案	处理意见
1	浙江百合花集团有限公司	青山区临江工业园	二氧化硫	未监测	未监测（无采样口）	正常	正常	否	规范设置采样口。
2	浙江百合花集团有限公司（老厂区）	青山区河庄镇一工段	其他废气	未监测	未监测	废气处理装置不正常运行。	1、氨气吸收装置未运行；2、锅炉脱除吸收塘喷淋管，未运行吸收塘喷淋。	是	责令正常使用大气污染物处理设施。
3	浙江中港印染有限公司	青山区临江工业园	二氧化硫	未监测	已监测未超标	正常	正常	否	无
4	杭州锦盛集团有限公司	属于山园1410-21号	二氧化硫	未监测	已监测未超标	正常	二氧化硫吸收效果差。	是	责令加强环保监管，保证污染物达标排放。
5	杭州天丰塑料造床厂	塘桥镇高家塘村	无	未监测	未监测	无锅炉	正常	否	无
6	杭州万事利生物科技股份有限公司	余杭区临平街道望梅路619号	无	未监测	未监测	锅炉停运	正常	否	无
7	杭州国宇制衣有限公司	余杭区临平街道红丰路509号	无	未监测	未监测	锅炉停运	正常	否	无
8	杭州钱江印染化工有限公司	青山区河庄镇	二氧化硫、定型废气、粉尘	未监测	已监测未超标	正常	正常	否	无
9	杭州余杭禾丰印花厂	余杭区临平街道禾丰村金家角1号	二氧化硫、定型废气、粉尘	未监测	已监测未超标	1台160万大卡锅炉无脱硫设施。	1、1台160万大卡锅炉无脱硫设施；2、锅炉脱硫除尘直接使用河水，未添加碱液；3、脱硫除尘吸收塘漏排外环境。	是	1、立即建设160万大卡锅炉脱硫设施；2、按要求足量添加碱液；3、脱硫除尘吸收塘收集处理，不得外排。

3. The number of cities scoring over 60 points increased to 19 in 2011, up from 11 in 2009-2010, which itself was up from 4 in 2008.

Under the PITI criteria, 60 points are allocated according to legal requirements. A further 40 points are then allocated according to international experience and the requirements of safeguarding the environmental rights of the general public. Under the PITI criteria, if a city attains a score of 60 points or higher, it is deemed to have a satisfactory level of open environmental information.

Among the cities that attained a satisfactory score are: Changzhou, Taizhou, Zhongshan, Foshan, Beijing, Dongguan, Wenzhou, and Qingdao. Each of these cities scored over 70 points. The two leading cities, Ningbo and Shenzhen, both scored over 80 points.

Figure 10: 2011 Cities with PITI Score Above 70



When a policy is launched, there can be a simultaneous release of related legislation, media attention, and/or demand from higher authorities. However, with the passage of time, many of these policies and systems are difficult to adhere to. On 1 May 2008, when the open environmental information system was implemented, it also faced this risk. Now, after three years have passed, this system has not only endured, but, as a whole, is still expanding. This progress, in itself, provides a sense of gratification.

B. Open environmental information in China is still in the initial stages.

1. Of a possible 100 points, the average PITI score for 2011 was 40.14 which indicates that the majority of cities do not yet have satisfactorily open environmental information.

The explanation for such a low average score is two-fold: first, a number of cities had extremely low scores and second, progress in some cities, whose original scores were already not very high, actually regressed.

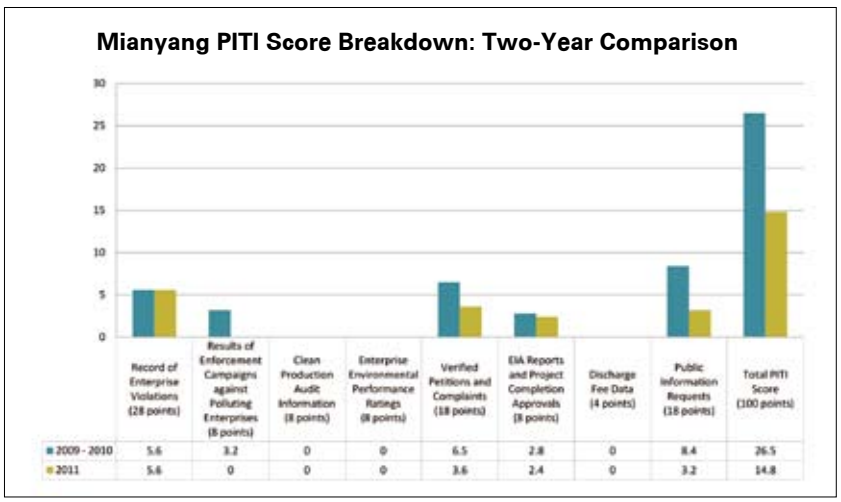
a) A number of cities still have scores below 20

The "Measures on Open Environmental Information (Trial)" were implemented over three years ago, yet the cities of Chifeng, Zunyi, Mianyang, Jinzhou, Zhangjiajie, Hohhot, Tai'an, Yibin, Karamay, Qujing, Yan'an and Jinchang all scored less than 20 points, meaning that local people still have trouble obtaining information on pollution source supervision.

Case Study: Mianyang City

In the 2011 assessment, Mianyang scored 11.7 points, falling below the 15 point line and scoring zero for many items.

Figure 11: Mianyang PITI Score Breakdown: Two-Year Comparison



Through a year-to-year comparison, we can see that Mianyang mainly lost points in 2011 in the following areas: enforcement campaigns against polluting enterprises, verified petitions and complaints, and in responsiveness to public information requests.

- In the 2009-2010 PITI assessment, with regard to enforcement campaigns against polluting enterprises, the Mianyang EPB published a small list of enforcement campaigns against polluting enterprises. But in the 2011 PITI assessment, there were no documents relating to enforcement campaigns against polluting enterprises.
- In the 2009-2010 PITI assessment, with regard to verified petitions and complaints, Mianyang's mayor published eight months of environmental verified petitions and complaints. But in the 2011 PITI assessment, none were known to have been published.
- In the 2009-2010 PITI assessment, with regard to public information requests, the Mianyang EPB replied, providing a list of administrative penalties for the first quarter. But during the period covered by the 2011 PITI assessment, the Mianyang EPB did not reply to public information requests.

b. Scores declined for a number of cities

During the 2011 PITI assessment, the following 10 cities had the most significant score decreases:

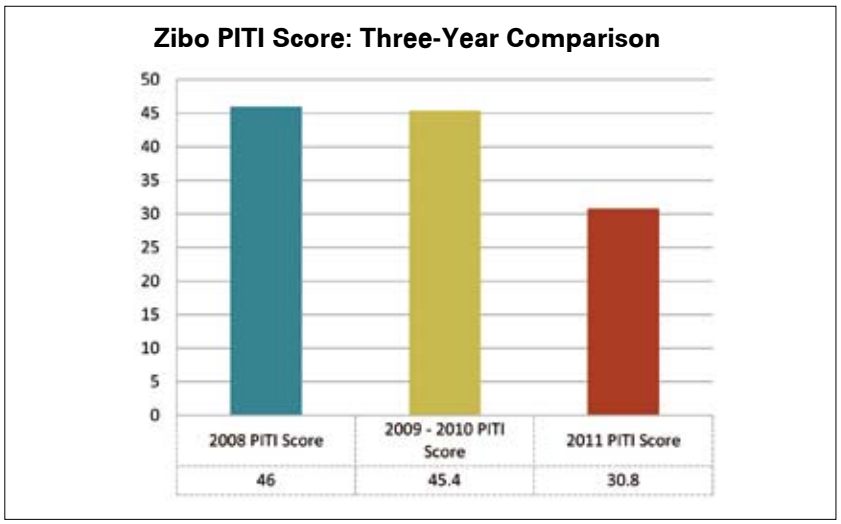
Figure 12: 10 Cities with the Most Significant Score Decreases in 2011 PITI

City	Total PITI score in 2011	Total PITI score in 2009 - 2010	2 Year Score Difference (Pts.)
Zibo	30.8	45.4	-14.6
Jinan	30	43.5	-13.5
Mianyang	14.8	26.5	-11.7
Zhengzhou	38.4	50	-11.6
Yantai	37.3	48.7	-11.4
Anyang	26.3	36.3	-10
Datong	20.4	29.4	-9
Luzhou	31.4	39.8	-8.4
Changsha	27.5	35.8	-8.3
Xiamen	29.4	37.6	-8.2

Case Study: Mianyang City

In the 2008 PITI assessment, Zibo scored 46 points and sustained no major change in 2009-2010. However, Zibo experienced a significant decrease in points scored during the 2011 assessment. Zibo's score fell 17.8 points from its 2008 score and 14.6 from its 2009-2010 score, giving it the most significant score decrease of all 113 cities.

Figure 13: Zibo PITI Score: Three-Year Comparison



Zibo's lower 2011 PITI score was mainly due to a decrease in open environmental information on records of enterprise violations and enforcement campaigns against polluting enterprises. In the 2011 assessment, only 51 records regarding 2010 environmental violations, 14% of the number published in the 2008 PITI, could be found.

By comparing the previous two years' assessments with this year's assessment, it can be seen that open environmental information on records of enterprise violations and enforcement campaigns against polluting enterprises has decreased. The figure below shows that, in 2009, Zibo published company supervision information for four months. However, in the 2011 assessment, none of this information could be found.

Figure 14: Image of Zibo EPB Website, (Image Source: Zibo Environmental Protection Bureau: http://www.zbepb.gov.cn/Item/5109.aspx, Downloaded: 2 December 2011.)

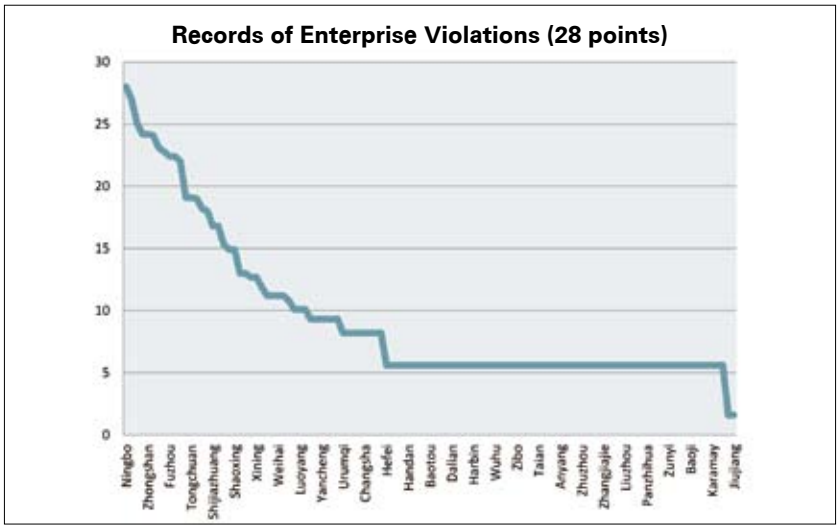
The correlation between Zibo's low PITI score and its high volume of industrial pollution discharge is clear. Zibo's industrial sulfur dioxide and industrial nitrogen oxide emissions have been among the highest in Shandong Province for a number of years. In 2010, Zibo's industrial sulfur dioxide and industrial nitrogen oxide emissions were nationally ranked 10th and 17th respectively and among the highest in the entire country. Corresponding with these large emissions is Zibo's second-place rank in Shandong Province for the number of key state-monitored enterprises (51 companies monitored for waste gas and 34 companies monitored for waste water).

2. Significant gaps still exist with two crucial issues.

a) Publication of Pollution Source Supervision Records

Publication of pollution source supervision records allows the general public to understand an enterprise's environmental compliance status and serves an extremely important function. With regard to this issue, 65 cities still have not managed to score above the minimum. For the public in these cities, it is difficult to make direct use of the city's environmental information and understand the environmental performances of neighboring enterprises. During the assessment process, Benxi, Jiujiang, Hohhot, and Chifeng, among other cities, performed the worst in this criterion. In Jinzhou City, not a single 2010 supervision record could be found.

Figure 15: Records of Enterprise Violations



b) Public Information Requests

Article 5 of the "Measures on Open Environmental Information (Trial)" clearly states that citizens, legal professionals and other groups can apply to obtain government environmental information. Over three years of assessment, we have seen some positive progress with regard to responses to public information requests. The number of cities responding to and providing data related to public information requests has risen from 29 in 2008 to 32 in 2009-2010 and to 42 in 2011.

However, there are still three issues worth noting:

- A number of cities did not even score four points, which reveals that, in those cities, even the most basic of public information request channels are obstructed and there is no way of applying for environmental information.
- In a number of cities, employee turnover results in unanswered public information requests. This correlation reveals that the public information request process has yet to be institutionalized.
- Before this year's PITI assessment, EPBs were already required to proactively publicize lists of enterprises with environmental administrative penalties. Because of this, the fact that we were able to obtain these records upon request does not necessarily mean that other public information requests are responded to in the same manner.

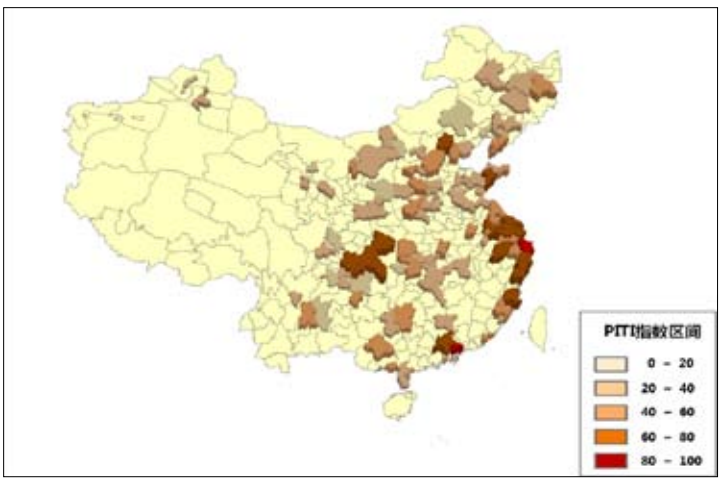
The volume of environmental information that the government controls is huge, so it is difficult to proactively provide open environmental information. The general public needs to safeguard its own environmental rights. Because the public and the government often have different needs with regard to environmental information, public information requests have become a very important vehicle for the public in obtaining environmental information.

When comparing open environmental information systems in China and in the Western world with regard to requirements for proactive publication, China does not lag behind, but rather has more requirements. However, with regard to responses to public information requests, whether it is in publication requirements or the practice of publication, there are still some obvious gaps. This is one of the main reasons why China's open environmental information system, on a whole, has only been established at an initial stage.

II. Breakthroughs in open environmental information have occurred in some regions, whilst other regions with large emitters have regressed, thus widening the gap

An outstanding characteristic of the 2011 PITI assessment is that a number of regions have made overall breakthroughs. The Pearl River and the Yangtze River Deltas have developed into high performance regions and Beijing and Chongqing municipalities are spearheading positive progress in the North and West.

Figure 16: PITI Score for 113 Cities



A. The Pearl River and Yangtze River Deltas are both high performance regions.

Ningbo City has come up on top for three years running. It continues to exemplify good performance with regard to responses to public information requests, publication of enterprise violation records and open environmental information on the disposition of verified petitions and complaints. Ningbo's high score of 83.5 counteracted Hangzhou City's lower score and made it possible for Zhejiang Province's seven assessed cities to achieve an average score of 61.77. This characterized Zhejiang as the first province to attain an average assessed city score that surpassed the passing mark.

Figure 17: PITI Score Comparison: Seven Cities in Zhejiang Province

However, in 2011, Ningbo did not singly stand out above the crowd. Shenzhen City, with 83.3 points, was a close second and gained significant momentum.

Case Study: Guangdong Province

Of the nine assessed cities throughout Guangdong Province, Shenzhen, Guangzhou, Foshan, Zhongshan and Dongguan all scored above 60 points and Foshan, Zhongshan and Donguan scored 74.6, 76 and 72.1, respectively.

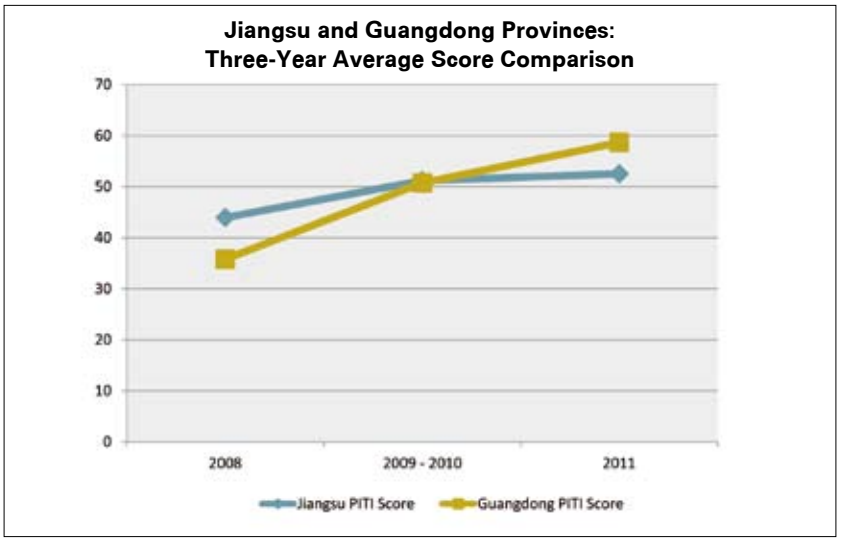
In the 2011 PITI assessment, Guangdong Province's average score was 58.66, which came very close to the passing score. The six cities assessed in the Pearl River Delta scored an average of 67.77 points, making it a region with admirable breakthroughs.

It should be noted that Guangdong's level of open environmental information was initially low. In the 2008 PITI assessment we carried out a comparison between the nine assessed cities in Guangdong Province and the nine assessed cities in Jiangsu Province. The two provinces' per-capita GDP was roughly the same but Guangdong's PITI average score was 8.18 points behind Jiangsu.

After three years of hard work, Guangdong's 2011 PITI score increased by 7.93 points from the 2009-2010 assessment and 22.87 points from the 2008 assessment.

Shenzhen, Zhongshan and Foshan cities are representative of the Guangdong block of cities. Through three years of hard work, they have enabled Guangdong Province to surpass Jiangsu Province to obtain the second highest provincial score average outside of the main municipalities.

Figure 18: Jiangsu Province and Guangdong Province PITI Score Three-Year Average



In analyzing the characteristics of these high scoring cities, it is possible to see that they all have outstanding performance with regard to open environmental information on records of enterprise violations.

The rankings for open environmental information on records of enterprise violations are as follows:

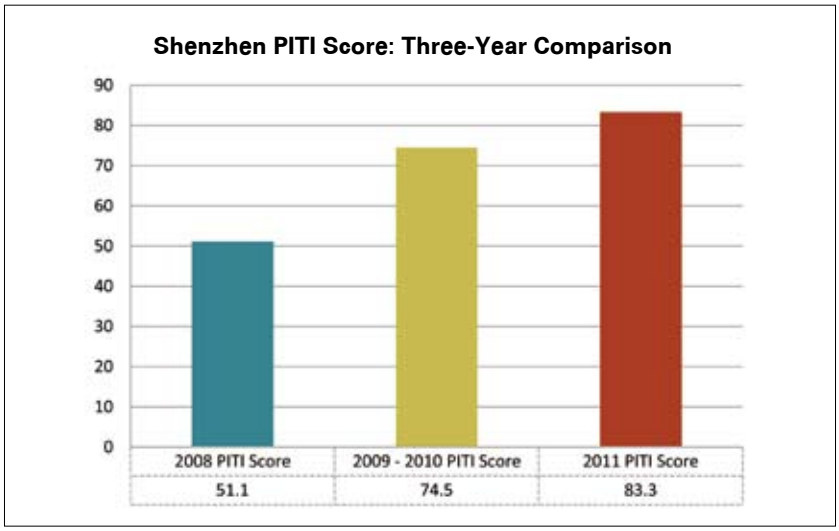
Figure 19: Top Ten Cities for Open Environmental Information on Records of Enterprise Violations

City	Sub-Score for Records of Enterprise Violations	Percentage of 28 Possible Points
Ningbo	28	100.00%
Shenzhen	27	96.43%
Foshan	25.1	89.64%
Beijing	24.2	86.43%
Zhongshan	24.2	86.43%
Shanghai	24.1	86.07%
Yinchuan	23.1	82.50%
Taizhou	22.8	81.43%
Fuzhou	22.4	80.00%
Qingdao	22.4	80.00%

Case Study: Shenzhen City

Since 2008, when the first PITI assessment was carried out, Shenzhen's PITI score has risen steadily. Its 2011 score broke through the critical 80-point barrier, making Shenzhen one of only two cities scoring over 80 points.

Figure 20: Shenzhen Annual PITI Score: Three-Year Comparison



With regard to the publication of information on "records of enterprise violations," Shenzhen not only kept up its previous record on open environmental information, but also, on 9 June 2010 and 17 March 2011, published its "2010 Administrative Penalty Decisions (January to May)" and "2010 Administrative Penalty Decisions (June to December)" on the "Environmental Administrative Penalty" section of its website (see figure 21 for details). The published administrative penalty decision notices contained a comprehensive set of facts related to the violations, including the pollutant that was in breach of the standards, its concentration and the highest level of discharge concentration permitted. Shenzhen scored 27 points (out of a maximum of 28) for this part of its 2011 PITI score.

Figure 21: Shenzhen Habitat and Environment Committee Website, "Environmental Law Enforcement" Section, (Image Source: Shenzhen Habitat and Environment Committee Website: http://www.szhec.gov.cn/xxgk/xxgkml/xxgk_4/xxgk_4_14, Downloaded: 22 December 2011.)

B. The large emitters have made little progress

Some provinces with high concentrations of large emitters, such as Shandong, Inner Mongolia, Sichuan, Henan and Hunan, have either made little progress or regressed.

Case Study: Shandong Province

Shandong Province is located in the eastern part of China. It has a large population and a developed economy. In 2010, Shandong's GDP was RMB 3941.62 billion, making it the province with the third largest GDP in China.

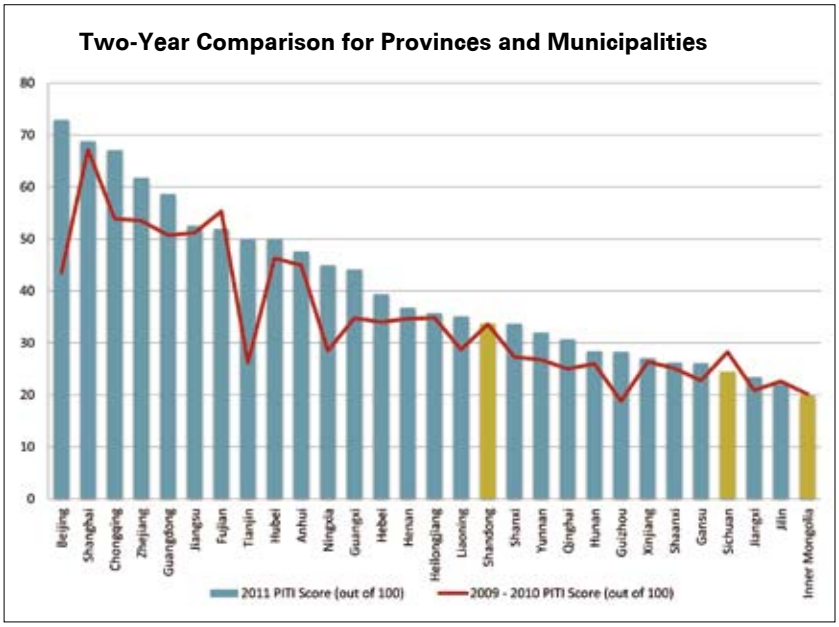
At the same time, Shandong's heavy chemical industry has developed and now discharges a high volume of pollutants. Using sulfur dioxide as an example, it can be seen that, since 2004, Shandong's sulfur dioxide emissions have been the highest in China. Since 2009, Shandong's nitrogen oxide emissions have surpassed those of Guangdong Province, making Shandong the largest provincial nitrogen dioxide emitter in China.

Figure 22: 2010 Provincial Sulfur Dioxide Discharge Volume Ranking

序号	地区	年份	二氧化硫
1.	山东	2010	153.8万吨
2.	内蒙古	2010	139.4万吨
3.	河南	2010	133.9万吨
4.	山西	2010	124.9万吨
5.	河北	2010	123.4万吨
6.	贵州	2010	114.9万吨
7.	四川	2010	113.1万吨
8.	广东	2010	105.1万吨
9.	江苏	2010	105万吨
10.	辽宁	2010	102.2万吨

These developments correspond to Shandong's PITI score hovering around 30 points over the past three years. From 2008 to 2011, Shandong's provincial average continually decreased.

Figure 23: Provinces with Large Discharge Volumes have Open Environmental Information Limitations



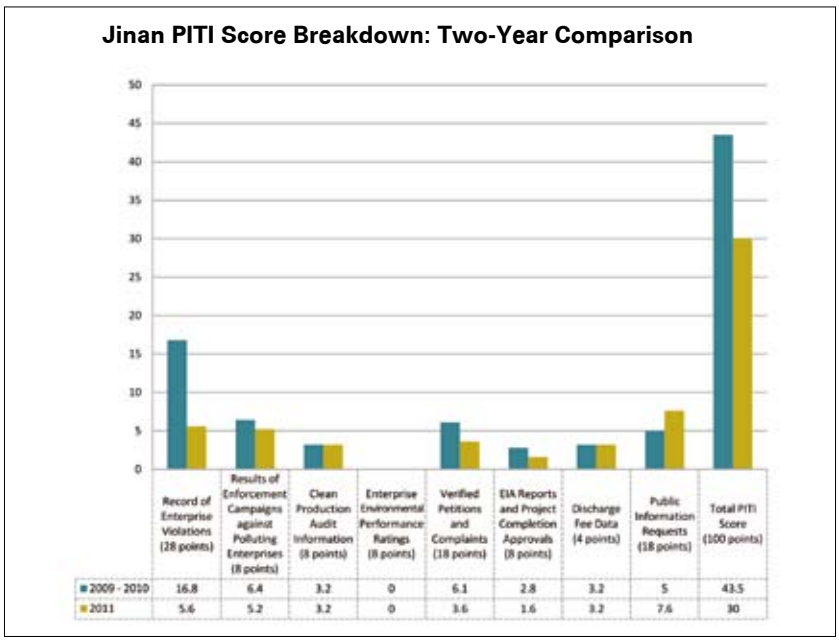
Although Shandong Province's PITI performance has been poor, it is not related to the province's level of economic development. Shandong's pollution discharge volume is very high – a number of its cities have serious pollution problems and many have Key State-Monitored Pollution Sources. In 2011, Shandong had the most Key State Monitored Pollution Source Enterprises of any province in China. Because the amount of environmental supervision records published was very minimal, the public's right to open environmental information could not be satisfied.

As previously mentioned, Zibo City, located in Shandong Province, suffered a steep decline in its 2011 PITI score. Jinan, the provincial capital of Shandong, also had a marked decline.

Case Study: Jinan

With regard to the crucial criterion of open environmental information on supervision records, Jinan's performance experienced a serious step back. During the 2009-2010 PITI assessment period, 64 records of enterprise violations were found, including nine from Key Monitored Enterprises. However, during the 2011 PITI assessment period, this number dropped to 19.

Figure 24: Jinan PITI Score Breakdown: Two-Year Comparison



In September 2009, Jinan started regularly publishing "Daily Environmental Monitoring Reports for the Period of the National Games." These reports published the environmental statuses and implemented remediation statuses of Municipally Controlled Key Supervision Enterprises. This good practice ended with the conclusion of the National Games and led to a steep decline in the amount of open environmental information regarding pollution sources as compared with the previous year's assessment.

There exists an obvious correlation between the decline of open environmental information in Jinan and the increase in industrial emissions. In the following figure, it can be seen that, year after year, there has been an upward trend in the amount of industrial emissions in Jinan. The amount of industrial nitrogen oxide emissions has also rapidly increased by 72.26% over the course of five years.

Figure 25: Upward Trend in Jinan City's Industrial Emissions Discharge Volume Since 2005 (Image Source: IPE Website, Downloaded: January 2012.)

Figure 26: Upward Trend in Jinan City's Nitrogen Oxide Industrial Discharge Volume Since 2006 (Image Source: IPE Website, Downloaded: January 2012.)

There was also a limit to the number of records of enterprise violations that could be found for other cities in Shandong Province. For example, only 25 records could be found for Jining, 13 for Rizhao and 2 for Tai'an.

We strongly recommend that all Key Environmental Protection Cities in Shandong realign their positions on economic development and environmental protection and proactively make up for deficiencies in open environmental information.

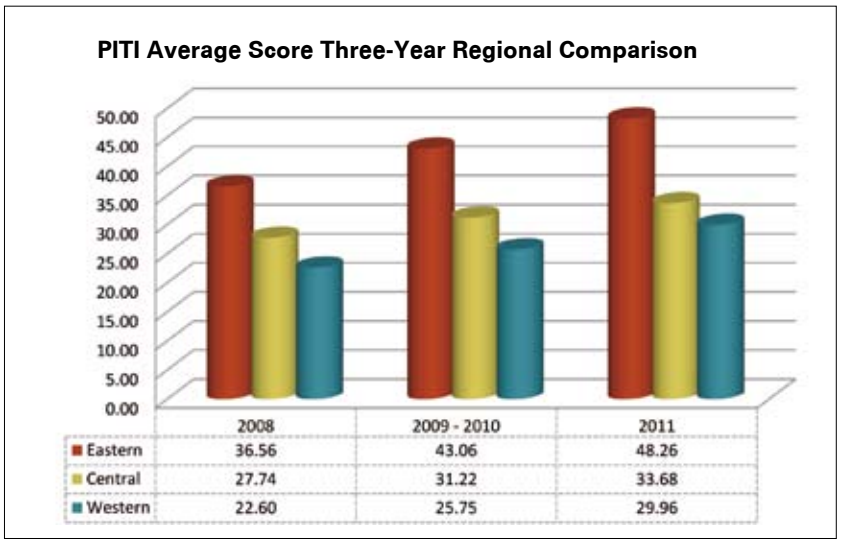
In addition to looking toward good practices in advanced provinces such as Guangdong and Jiangsu to further learning, the first step for cities in Shandong Province could be to look to Shandong's own Qingdao City. Among a series of decreases, Qingdao bucked the trend and increased its score by 32.9 points (from 37.7 points in 2009-2010 to 70.6 points in 2011), making it the city with the largest increase in the entire country.

Figure 27: PITI Score Comparison: Ten Cities in Shandong Province

C. Progress made in information transparency by provinces in Central and Western China: Magnified regional disparities

For an eastern province, Shandong's score is comparatively low. However, on the whole, we can see that, since the 2008 PITI assessment, scores in the eastern region have continued to be higher than scores in the central region and scores in the central region have continued to be higher than scores in the western region. Over the course of three PITI assessments, all three regions have experienced yearly score increases. However, the increase is higher in the eastern region than it is in the central or western regions.

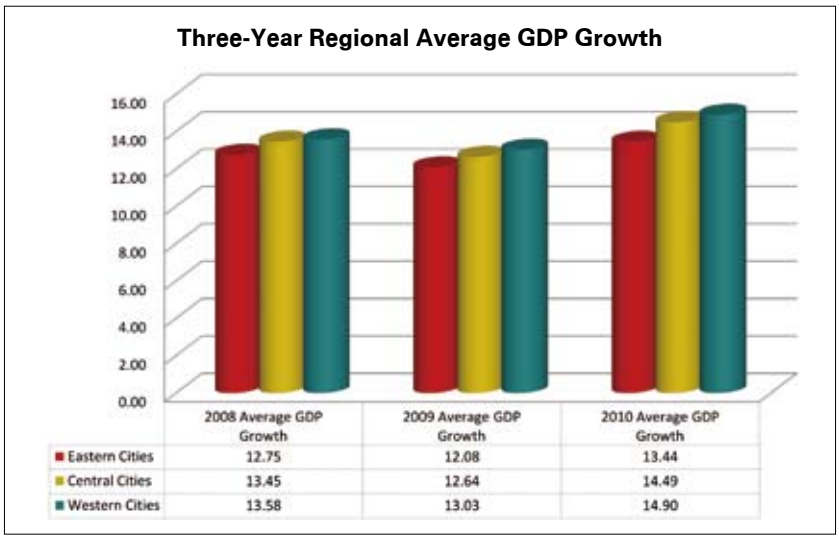
Figure 28: PITI Average Score Three-Year Regional Comparison



- 2008: The score difference between the eastern and central regions is close to 9 points. The score difference between the eastern and western regions is 14 points.
- 2009-2010: The score difference between the eastern and central regions is close to 13 points. The score difference between the eastern and western regions is nearly 20 points.
- 2011: The score difference between the eastern and central regions is close to exceeding 15 points. The score difference between the eastern and western regions is nearly 22 points.

In previous analyses, these disparities were attributed to differences in levels of economic development. However, when looking at economic development indicators over the past three years, the average annual development speed of the central and western regions has been continuously higher than that of the eastern region.

Figure 29: Three-Year Regional Average GDP Growth[2]

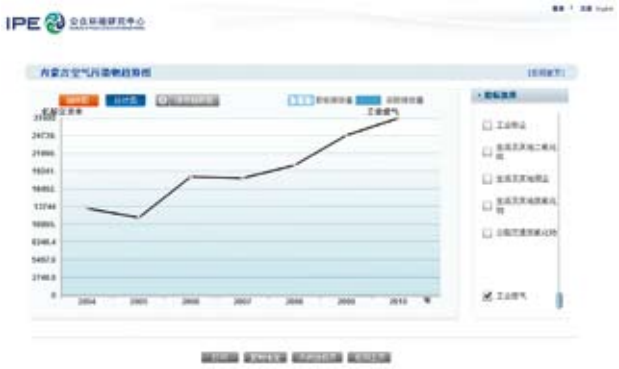


It is clear, when analyzing open environmental information in the central and western regions, that there is no correlation to the speed of economic development. If we blindly focus on economic development as the sole reason for the disparity, it will lead to environmental pollution and ecological damage, which are detrimental to achieving a path of sustainable development for the central and western regions.

Case Study: Inner Mongolia Province

Inner Mongolia had the fastest pace of development in the central and western regions. In 2010, the GDP per capita in Inner Mongolia grew to RMB 47,347, giving it the sixth highest provincial GDP per capita in China. Total GDP in Inner Mongolia surpassed the one hundred million RMB mark, an increase of 15% in the speed of annual average GDP growth. This corresponds with the upward trend in pollution emissions in Inner Mongolia. The following figure shows a doubling of pollution emissions in Inner Mongolia between 2004 and 2010.

Figure 30: Upward Trend in Inner Mongolia's Industrial Emissions Discharge Volume (Image Source: IPE Website, Downloaded: January 2012.)



[2] Method of calculating the Speed of Increases in Eastern, Central and Western Regions: First, the 113 assessed cities were divided into three sections depending on which region they were from. The rate of GDP increase for each of the sections of the 113 assessed cities was then added. An average was then calculated. That number was then that region's average increase.

As coal is considered a key energy source for fast paced development, Inner Mongolia's soot discharge volume moved from fifth place nationally in 2009 to first place in 2010.

Figure 31: Rankings for Provincial Level Soot Discharge (2011) (Image Source: IPE Website, Downloaded: January 2012.)

No.	Location	Year	Total Soot
1.	Inner Mongolia	2010	64.7 10^4t
2.	Liaoning	2010	63.3 10^4t
3.	Shanxi	2010	62.1 10^4t
4.	Henan	2010	54.7 10^4t
5.	Hebei	2010	50 10^4t
6.	Heilongjiang	2010	42.2 10^4t
7.	Shandong	2010	39.2 10^4t
8.	Xinjiang	2010	34.4 10^4t
9.	Sichuan	2010	34.1 10^4t
10.	Jiangsu	2010	33.5 10^4t

For Inner Mongolia's four PITI-assessed cities, scores have stagnated.

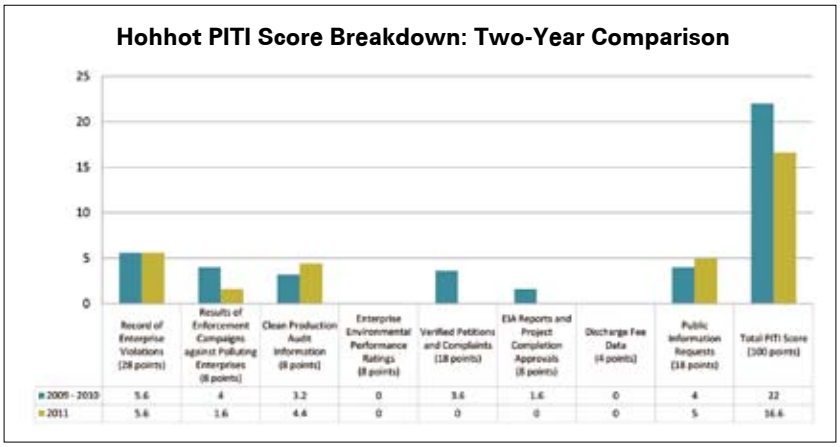
Case Study: Hohhot City

In recent years, Hohhot, the provincial capital of Inner Mongolia, has experienced rapid economic development. The city has 31 Key State-Monitored Enterprises for wastewater and emissions and has large pollutant discharge volumes. Meanwhile, its open environmental information score has stagnated, coming in sixth from the bottom in the 2011 PITI assessment and scoring the lowest among provincial capitals.

When analyzing Hohhot's performance, it is possible to see that, for the three most important assessment criteria, the city's PITI score appears to be critically low.

- Records of enterprise violations: In the 2011 PITI assessment, only 20 records of enterprise violations were found, down four from the2009-2010 PITI figure.
- Verified petition and publication of complaints: Since no publication platform was found for the Hohhot Environmental Protection Bureau, the 2011 score was reduced to zero.
- Public information requests: In the last three years, no responses have has been received.

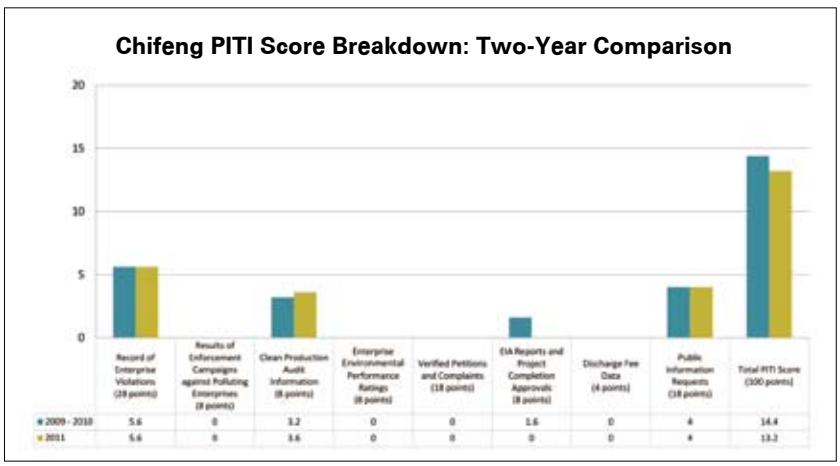
Figure 32: Hohhot PITI Score Breakdown: Two-Year Comparison



Case Study: Chifeng City

In recent years, the economy of Chifeng has developed relatively quickly, which corresponds with its large pollution volumes. In 2009, the city's sulfur dioxide discharge volume ranked fourth among the nation's prefecture-level cities and, in 2010, it was ranked eighth. However, over the past three years, the city's level of open environmental information has decreased and, in the 2011 PITI assessment, Chifeng ranked last out of the 113 cities.

Figure 33: Chifeng PITI Score Breakdown: Two-Year Comparison



In the 2011 assessment, Chifeng only received points for records of enterprise violations, clean production audit information and public information requests. As for the five other criteria, including petitioning and complaints and enterprise evaluations, Chifeng scored zero points. Of the 113 assessed cities, Chifeng is the only case with such poor results.

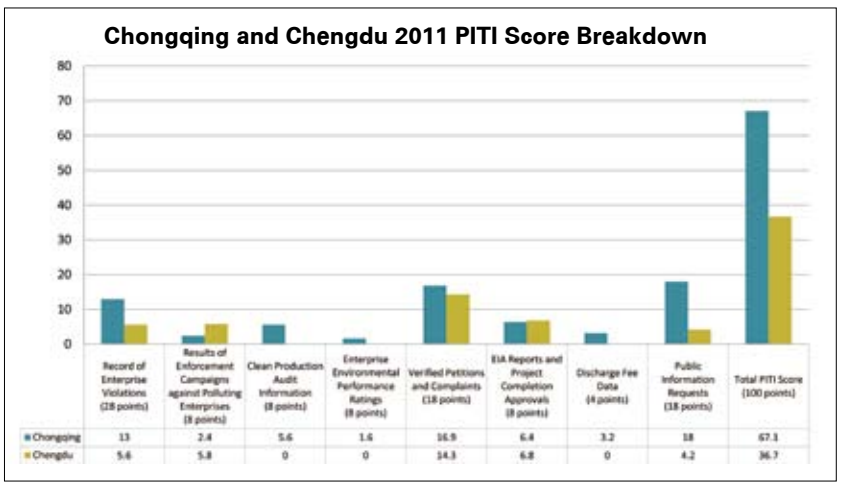
The ability to find enterprise violation records for all four cities assessed in Inner Mongolia was extremely limited. Baotou had 38, Hohhot had 28, Erdos had 19 and Chifeng had 12. None of the four cities responded to public information requests.

D. Every region should learn from other good examples in their area

Northeastern China, as a whole, had an average performance, but Beijing scored highly. Shandong Province's performance was poor, but Qingdao City scored highly. In Central and Western China, there were also high-performance cities. Chongqing Municipality scored well at 67.1 points and ranked 13th out of 113, which makes it a prime example of good practice in western China.

Near Chongqing, in Southwest China, none of Sichuan Province's five PITI assessed cities performed particularly well. Chengdu, the provincial capital, scored highest, but still only reached 36.7 points. After comparing Chongqing and Chengdu, it is clear why Chongqing's 2011 PITI score was 82.8% higher than Chengdu's score.

Figure 34: Chongqing and Chengdu 2011 PITI Score Breakdown



With regard to the most important criterion for open environmental information, which is the publication of violation records, Chongqing published 258 records of enterprise violations, including 58 records for Key State Monitored Enterprises. In comparison, Chengdu only published 79 records.

The information that Chongqing published not only covered compliance status for a whole year, but also included each individual administrative penalty that a company incurred. For example, the administrative penalty statuses for Chongqing Chuanqing Chemical Factory from January, March, July, August, September and October 2010 were all published. In contrast, Chengdu only covered four months of compliance statuses.

Chongqing also published a list of companies that refused to implement administrative penalties that were already in effect. This action made Chongqing's performance stand out on the national level.

In addition, with regard to the publication of clean production audit information, Chongqing continued the convention of the previous two years and even sought to improve on it. In 2010, Chongqing published two separate lists for a total of 139 compulsory clean production audits. Among these, 45 companies provided information about pollutant discharge status. Chengdu, on the other hand, scored zero points for its publication of information on clean production audits. At the same time, for the enterprise environmental performance ratings and discharge fee data criteria, Chengdu also received zero points.

Based on this analysis, we recommend that Chengdu and other cities in Sichuan Province first try to learn from neighboring Chongqing Municipality in order to improve the substandard aspects of their open environmental information systems as quickly as possible.

III. Open environmental information has already put pressure on emitting industries in a number of cities. However, to fully develop this potential, China must promote a system for pollution discharge registration.

International practices have shown that open environmental information can pressure enterprises to reduce pollution discharge. Furthermore, reasoning behind the push for reduced emissions is that open environmental information promotes societal supervision of companies' over environmental compliance.

"Measures on Open Environmental Information (Trial)" has now been active for three years and, although the overall level of open environmental information is still in its initial stages, it has already begun to encourage societal supervision. Through publically available government supervision records on companies, the general public has come to understand that many pollution incidents are not accidental in nature. Furthermore, the public has discovered that violating companies undergo pressure in a variety of situations, including exportation, public listing of the company and environmental performance assessments.

Take the green supply chain as an example. In March 2007, more than 21 environmental NGOs launched the Green Choice Alliance, which encourages consumers to use their purchasing power to influence the environmental behavior of a company and calls on major brands to green their supply chain in China. The publication of supervision information has become an important foundation for this project. By searching the more than 93,000 company supervision records catalogued on the pollution map database, a company can instantly understand whether or not a published violation record exists for its supplier.

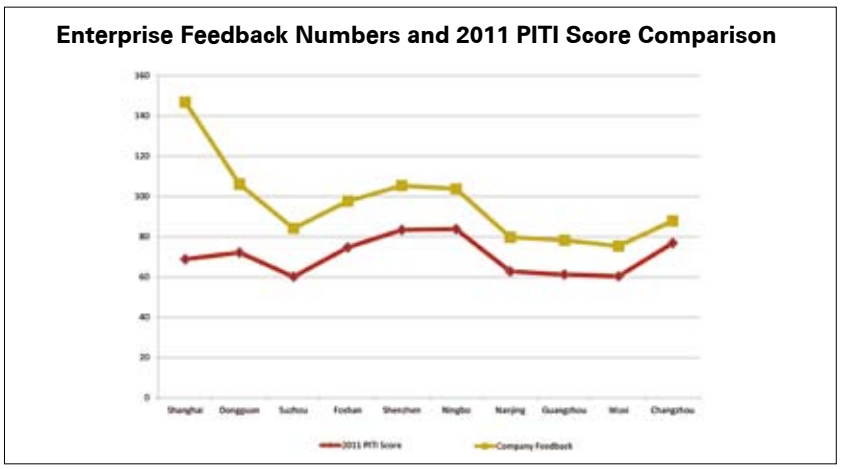
Since 2007, a number of major brands have successively become Green Choice supply chain management system users. These brands include Wal-Mart, General Electric, Nike and Coca-Cola from the United States; Siemens, Vodafone, Unilever and H&M from Europe; Sony from Japan and Esquel from Hong Kong. Through Green Choice, a large number of suppliers have been informed that they must comply with environmental laws. Companies discovered to have violation records have been required to carry out rectification work and provide explanations for fear of losing purchasing orders.

At the end of 2011, a total of 542 companies had communicated their environmental violation problems (from here on referred to as "Enterprise Feedback") with environmental NGOs. The vast majority of these communications explained problems that had occurred and improvement works that had taken place. Nearly 80 of these companies went through third party audits or document reviews to prove to the public that they were environmentally compliant.

After analyzing these 542 enterprise feedbacks, we discovered that 81% came from the 113 Key Environmental Protection Cities. Of those environmental feedbacks coming from the 113 cities, 60% were from Shanghai, Dongguan, Suzhou, Foshan, Shenzhen, Ningbo, Nanjing, Guangzhou, Wuxi and Changzhou cities.

By breaking down and comparing the above 10 cities' PITI scores with their corresponding enterprise feedback numbers, it is clear that there exists a basic correlation between enterprise feedback numbers and the PITI score.

Figure 35: Enterprise Feedback Numbers and PITI Score Comparison

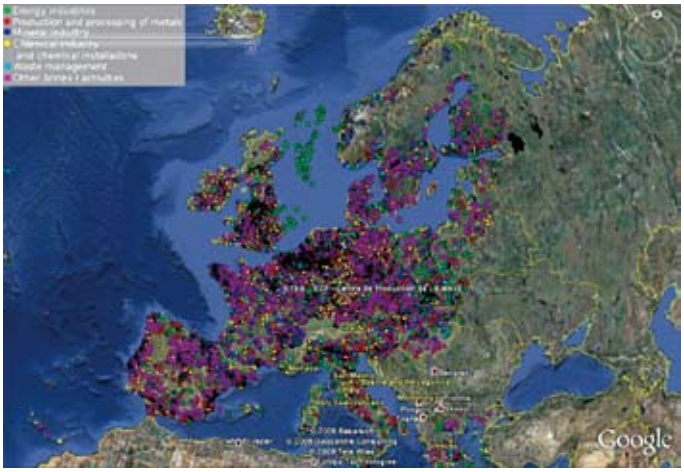


The above correlation between enterprise feedback numbers and PITI scores places public pressure on companies to begin emission reductions. And yet, this is only a drop in the ocean when compared with the enormous number of national pollution sources. To genuinely stimulate self-reduction potential, a combination of open environmental information with powerful information transparency measures and a pollutant release and transfer register system is necessary.

The above-mentioned system began in the 1980s when the United States established its 'Toxics Release Inventory (TRI)' system. Around the year 2000, the European Union established the 'Pollutant Release and Transfer Register (PRTR)' and, from then on, pollutant discharge databases have become a convention in modern, developed and industrialized nations.

Figure 36: North American Partnership for Environmental Community Action PRTR Distribution Map (Image Source: North American Partnership for Environmental Community Action Website http://www.cec.org/naatlas/prtr/NA_PRTR_2004en.kml, Downloaded: 26 January 2010.)

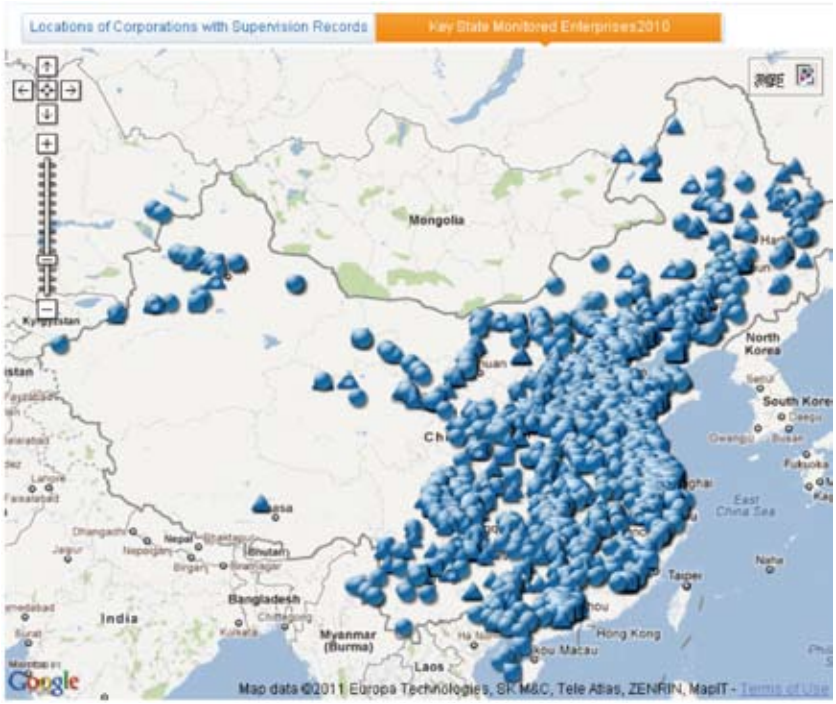
Figure 37: European PRTR Distribution Image (Image Source: European Pollutant Release Registry website: http://eper.ec.europa.eu/eper/files/EPER.kmz, Downloaded: 26 January 2010.)



A wide variety of research has proven that a PRTR system has the ability to bring environmental problems to the attention of companies and foster a competitive atmosphere. This incentivizes companies to race toward improving environmental performance and leads to a strengthening of public supervision, an enhancement of government enforcement effectiveness, a mobilization of stakeholders, a collective protection of the environment and a reduction in pollution. The lack of a pollutant release and transfer register is the most obvious drawback in China's open environmental information system. To make up for this shortcoming, social supervision of companies must be strengthened. For Chinese companies, energy reduction and even economic transformation are powerful sources of inspiration.

The following figure shows a map with the distribution of key pollution sources identified by environmental NGOs using lists of Key Monitored Enterprises as published by Environmental Protection Bureaus.

Figure 38: Key Pollution Source Distribution Map



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Part 2 Special Report:

Joint Effort by Environmental Organizations to Assess Open Environmental Information in all Prefecture-level Cities in Hunan Province

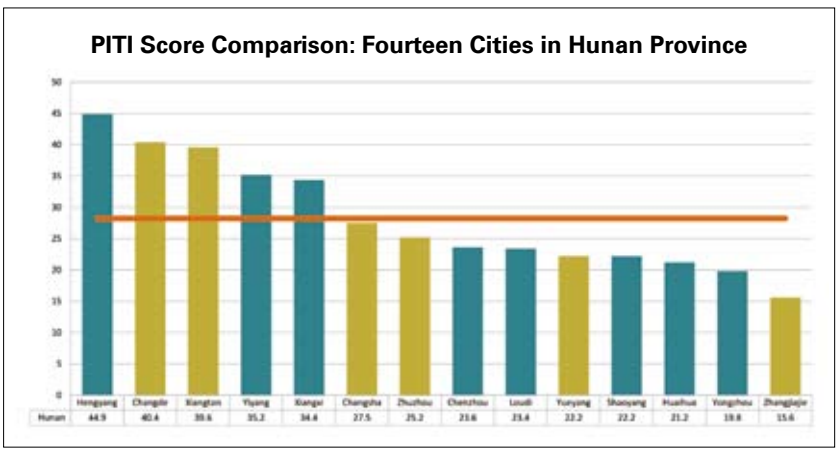
Green Hunan, an environmental NGO from Hunan Province, contributed greatly to the progress made in the 2011 PITI assessment. The NGO used the PITI to develop an assessment of open environmental information for eight prefecture-level cities in Hunan. When added to the six Key Environmental Protection cities already assessed by IPE and NRDC, the three NGOs jointly completed an assessment of open environmental information for all of the prefecture-level cities within a province.

Research Discoveries:

1. Open environmental information for every prefecture-level city in Hunan is still in its initial stages and the overall situation is not very optimistic.

The average score for the 14 assessed cities is only 28.23. This score is 11.91 points lower than the overall 2011 PITI average of 40.14, which reveals an obvious disparity. Furthermore, only two cities in Hunan reached the national average: Hengyang with 44.9 points and Changde with 40.4 points. The twelve other assessed cities all came in below the national average.

Figure 39: Score Comparison for 14 Cities in Hunan Province



2. All 14 prefecture-level cities have yet to establish a system of regularly publishing records of enterprise violations.

During the assessment we discovered that, over the past three years, none of the six Key Environmental Protection Cities in Hunan Province had established a system of publishing the administrative penalty statuses of companies with environmental violations. This year, with the additional research by Green Hunan, it was apparent that this remained true for the eight other assessed cities. On the Environmental Protection Bureau websites for each city, under the "Administrative Penalty" section, there is a simple list of relevant rules and regulations, a blank page, or no page at all. Under the "Records of Enterprise Violations" criterion, the average score for all of the 113 cities is 9.4. However, the average score for the 14 cities in Hunan is only 6.4. Even the highest scoring city in Hunan – Hengyang (11.2) – did not receive any points for publishing the environmental administrative penalties of companies operating in the area. Hengyang City only received points in the "Results of 'Enforcement Campaigns' against Polluting Enterprises" and "Verified Petitions and Complaints" sections.

3. The six Key Environmental Protection Cities did not show any superior performance. In fact, some of the non-Key Environmental Protection Cities showed definite progress.

The six Key Environmental Protection Cities in Hunan Province include: Changsha, Zhuzhou, Xiangtan, Yueyang, Changde and Zhangjiajie. The six Key Environmental Protection Cities averaged a score of 28.42 and the eight non-Key Environmental Protection Cities averaged a score of 28.09. The scores are almost level, showing that, with regard to points scored, the Key Environmental Protection Cities are not superior. The provincial capital, Changsha, which is also a Key Environmental Protection City, ranked sixth. Zhangjiajie, another Key Environmental Protection City, ranked last. And yet, some of the cities participating in the assessment for the first time have made some progress. For instance, Hengyang, which is not a Key Environmental Protection City, scored 44.9 points and ranked among the best of the 14 cities assessed in Hunan.

4. Faced with Public Information Requests, the performances of the eight Non-Key Environmental Protection Cities differed.

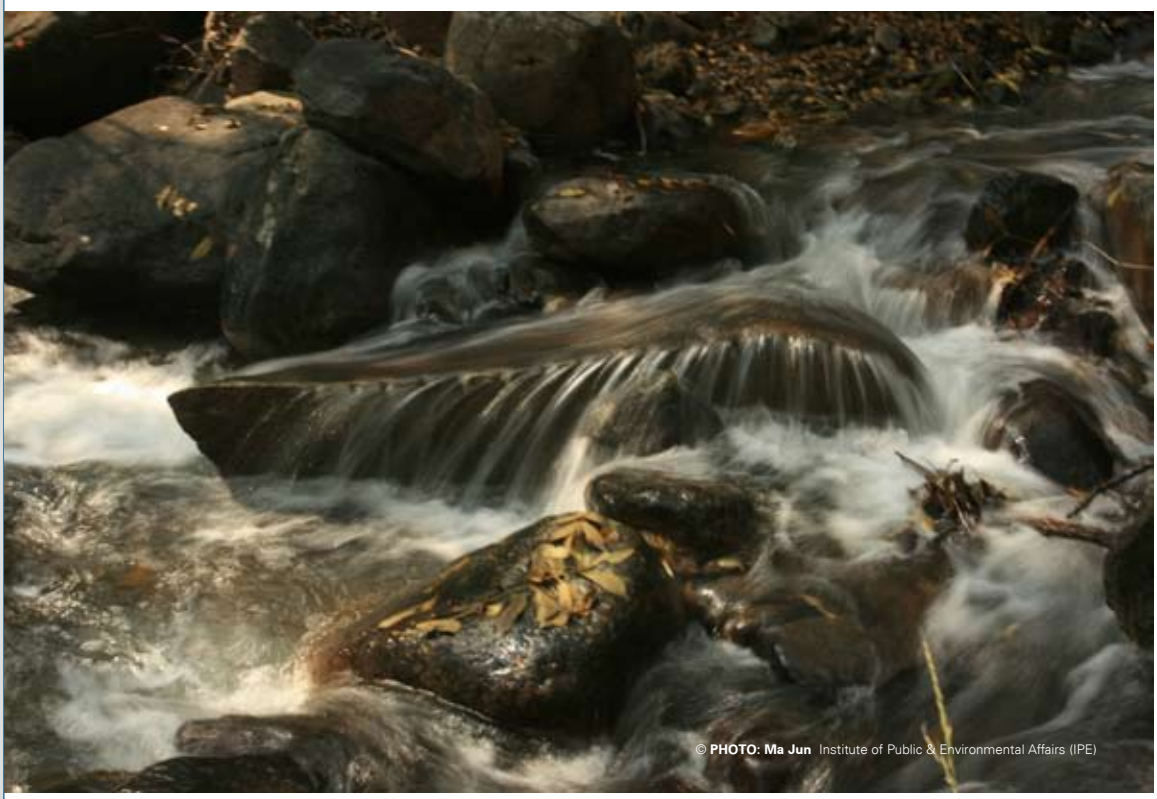
2011 was the first time that environmental NGOs made public information requests to Environmental Protection Bureaus of non-Key Environmental Protection Cities. Faced with the requests from environmental NGOs, Hengyang and Yiyang cities provided complete lists of administrative penalties from the second quarter of 2010.

- The dedicated public information request section of the Hengyang Government website offers several application methods. Applications received positive feedback from the receiving party and a list of 41 polluting companies with environmental administrative penalties was supplied in response. A noteworthy detail is that, if there were to be a delay in providing the requested information, then there would be telephone communication to inform of the delay.
- The Yiyang Government website had an online application section and also published relevant contact details such as the organization's fax number, address, and e-mail address. Although the application procedure had many complications, the Yiyang Environmental Protection Bureau did eventually respond with a valid list. However, the response time was longer than two business days, so they did not receive full marks.

It is not the case that the other cities did not provide any feedback whatsoever, but rather that they informed the environmental NGOs that they either did not have the required information or that they could not supply it. The different reasons that the Environmental Protection Bureaus gave for not being able to provide the requested information are as follows:

- The EPBs had a responsibility to the companies and could not publish company lists at will.
- During the assessment process, a number of staff from EPBs felt that, after a company received an administrative penalty and made corrective measures, no further publication of information was necessary.
- The EPBs stated they very rarely receive public information requests and are thus unfamiliar with the process. After some research, they replied again, this time stating that they could not provide the requested information.

For the first time, environmental NGOs were able to sketch out the status of open environmental information for every prefecture-level city in a province. This establishes a strong precedent by eliminating a blind spot in the national scope of open environmental information and driving public participation in open environmental information by encouraging local NGOs to get involved.



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Part 3 Drawing on International Experiences & Moving Toward a New Stage of Open Environmental Information

I. Preliminary Study of the Factors Contributing to Lower Scores and the Potential for Improvement

For the third annual PITI assessment, overall standards for open environmental information have continued to improve, but have not graduated past the initial stages with some cities still scoring lower than before. At the end of May 2011, NRDC, IPE and Environmental Protection Magazine worked together to organize the PITI best practices workshop. During the workshop, participating local environmental protection bureau representatives and experts discussed at length the issues with, and experiences gained from, the implementation of "Measures on Open Environmental Information (Trial)."[3] Highlights from the workshop discussions are as follows:

- The PITI assessment discovered that one of the weakest points in open environmental information is the timely publication of exceeding limits, perpetrating violations, and accidents. Some workshop participants pointed out that publicizing enterprise pollution information, especially administrative penalties, unlawful behavior, and pollution accidents, can possibly yield negative impacts, all of which are important factors for environmental protection bureaus to consider. The environmental protection bureaus are mainly responsible for open information regarding pollution sources. However, if an economically important enterprise is affected, there will be a substantial amount of public pressure on the environmental protection bureau. Also, environmental protection is inherently difficult and inevitably tied to the public's vital interests. Environmental protection departments might be concerned that the publication of negative information will reflect negatively on the environmental protection department's enforcement abilities in the eyes of the public.
- If requesting open environmental information while there is no institutional system in place, the scope of information that may be applied for and the process of application are not subject to necessary operational rules. When environmental protection departments are faced with publication requests, there is often hesitation in releasing information, feedback is varied, and there is no mature system in place to serve as a frame of reference.
- Resource allocation for open environmental information is insufficient while the breadth of areas covered by environmental protection departments is ever increasing. With limited staff and resources, the singular area of enforcement includes administrative permits, administrative penalties, discharge registration, correspondence, emergency response, etc. Specific to the open environmental information initiative, there is a lot of information that needs to be processed. The allocation of internal agency responsibilities, personnel, funds, and equipment directly impacts disclosure work. In addition, in situations where there is no automatic and

[3] "Measures on Open Environmental Information (Trial)," State Environmental Protection Administration Order No. 35, published April 11, 2007, effective May 1, 2008.

instantaneous pollution data monitoring, if pollution data is released to the public, the accuracy and explanatory power of such data will be called into question.

The above phenomena reveal that China's environmental protection departments, the public's awareness of environmental information, and the mechanism of open environmental information are all undergoing the gradual process of forming and maturing. These realities are also present in developed countries. Even so, through international experience, one learns that comprehensive improvement and maturity of the open environmental information system can strengthen dialogue between regulators and the public, promote the public's accurate understanding of and participation in environmental management, and provide a useful tool for the government's environmental management departments. In the long run, reductions in corporate pollution emissions and increases in resource utilization efficiency are both basic requirements that lead to sustainable development. Therefore, open environmental information is, in essence, a powerful pollution source management measure. This also coincides with one of the major findings from the 2011 PITI assessment: open environmental information has begun to place pressure on polluting enterprises in some cities and there is an increasing need to promote a pollutant release and transfer register (PRTR).

II. Comparative Open Environmental Information Systems: Japan, the United States, the United Kingdom and India

PRTR is an internationally common and proven effective system that promotes open environmental information. To better understand how different countries use open environmental information, specifically the PRTR system, to reduce industrial pollution, we have selected a few countries' systems as case studies. National contexts differ by their respective political, economic, and social conditions. To avoid generalizations and to show respect for national differences, we have selected countries for the case study based on considerations of geographical location, political system and stage of economic development. We have selected Japan, the United States, the United Kingdom and India with the hope that we can learn from commonalities throughout the various systems.

A. Japan: Pollutant Release and Transfer Register (PRTR)

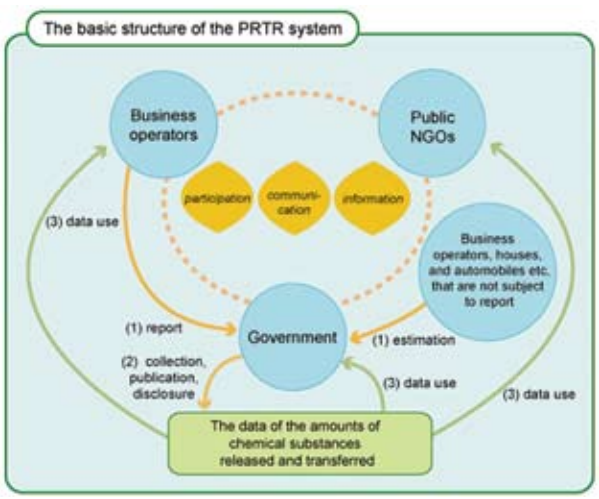
The Environment Agency of Japan (now the Ministry of the Environment, MOE) and the Ministry of International Trade and Industry (now the Ministry of Economy, Trade and Industry, METI) collaborated to prepare "A Bill on Confirmation, etc. of Release Amounts of Specific Chemical Substances in the Environment and Promotion of Improvements to the Management Thereof," which was promulgated on July 13th, 1999 (the "Act"). Based on this Act, beginning in 2001, business operators were required to estimate the amount and quality of their releases or transfers of Class I chemical substances (354 substances). Furthermore, they had to provide the Material Safety Data Sheet

(MSDS) to business counterparts when transactions of the Class I and Class II[4] designated chemical substances (81 substances) and products containing them, occurred between business operators. The MSDS must include information on physical and chemical properties and handling precautions of the substance. Class II designated chemical substances are not subject to the PRTR system. The following year, in 2002, business operators began to notify the government of the data and aggregate data has been published annually since the end of fiscal year 2002.[5]

PRTR has been used in Japan as a policy instrument to establish a common platform for risk communication among the government, business operators and the public by providing data about chemical substances releases into the environment (see figure 40). Socially, researchers of the National Institute for Land and Infrastructure Management (NILIM) have found PRTR to be a good way to communicate chemical risk, to encourage environmental activities of businesses, and to build good relationships among stakeholders, including those people who have anxiety about chemical risk.[6]

The PRTR in Japan reported high levels of several contaminants that had not been previously monitored. It thus helps to re-design existing environmental monitoring programs.[7] Those successes were due in part to the MOE actively engaging businesses and the public by publishing the Manual for PRTR Release Estimation Methods, Cases of Success toward Reduction of PRTR Substance Emissions (in Japanese) and the Guidebook for Citizens in the PRTR Information Plaza Japan online.[8]

Figure 40: The Basic Structure of the PRTR System in Japan
(Image Source: http://www.env.go.jp/en/chemi/prtr/about/overview.html)



[4] Classification of Class I and II chemicals was based on advice given by the Pharmaceutical Affairs and Food Sanitation Council (under the Ministry of Health, Labor, and Welfare, MHLW), the Chemical Substances Council (under Ministry of Economy, Trade, and Industry, METI), and the Central Environment Council (under MOE). Hazardous substances are selected based on their degree of hazard and the possibility of exposure.

[5] More information on the Japanese PRTR system is available at http://www.env.go.jp/en/chemi/prtr/about/index.html.

[6] Hiroki Yamagata et al., "Management of Chemical Substances in a Water Environment Communicating Among Stakeholders," Water Science & Technology 57 (1):109-116 (2008).

[7] Jens Hartmann, Norio Okada and Jason Levy, "Using PRTR Database for the Assessment of Surface Water Risk and Improvement of Monitoring in Japan," International Journal of Critical Infrastructures 1 (2/3):155-169 (2005).

[8] More information on the PRTR Information Plaza Japan is available at http://www.env.go.jp/en/chemi/prtr/prtr.html.

B. United States: Toxics Release Inventory (TRI)

Toxics Release Inventory (TRI) was established by the US Congress after a devastating chemical accident at a Union Carbide plant in Bhopal, India in 1984. Originally intended to improve understanding of potential risks from industrial facilities, Sections 311 and 312 of the Emergency Planning and Community Right-to-Know Act of 1986 (EPCRA) require all manufacturing facilities operating under SIC codes 20 - 39, with 10 or more employees to report the locations and quantities of chemicals stored on-site to relevant state and local governments in order to help communities prepare responses to chemical spills and similar emergencies. EPCRA Section 313 requires the US Environmental Protection Agency (EPA) and the states to collect annual data on releases and transfers of certain toxic chemicals from industrial facilities, and make the data publicly available in the Toxics Release Inventory (TRI).[9] In 1990, Congress passed the Pollution Prevention Act which required that additional data on waste management and source reduction activities be reported under TRI.

The EPA has now included over 650 toxic chemicals from more than 20,000 facilities in the TRI. In addition to the annual release of TRI data, the EPA also uses web applications that allow the public to better understand the available information. For example, TRIExplorer[10] aggregates data based on facilities, chemicals, geographic areas, or industry type (NAICS code) at a county, state, and national level. For more experienced users, TRI.NET provides raw TRI data downloadable for users to perform self-defined analysis.[11] Furthermore, the EPA developed Toxics Release Inventory Chemical Hazard Information Profiles (TRI-CHIP) that are accessible online for professionals to make sense of the hazardous effects of TRI chemicals on human health.[12] My Right-To-Know (myRTK)[13] is an EPA web application designed for mobile devices to map, for any location or address, nearby facilities that report to TRI as well as large permit holders that report to EPA air, water, or hazardous waste programs. The application provides, at the county level, comparative emissions data from similar industrial enterprises, individual emission sources of toxic chemical pollutants, public health impacts and a facility's compliance history.

Before the EPA undertook efforts to communicate pollution information to the public, environmental non-governmental organizations (NGOs) used available information to make the effects of pollution on daily life tangible to the public. For example, the Environmental Defense Fund (EDF) "Scorecard" website allows the public to search for toxic releases and transfers data by zip code and locate the worst polluters by zip code and by industry.[14] Another database, Envirofacts Warehouse,[15] has gone beyond TRI to provide the public with direct access to information contained in its databases on air, chemicals, facility information, grants/funding, hazardous waste, risk management plans, Superfund, and toxic releases.

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[9] More information on US Toxics Release Inventory is available at http://www.epa.gov/tri/. Last accessed 17 November 2011.
[10] More information on TRI Explorer is available at http://iaspub.epa.gov/triexplorer/tri_release.chemical.
[11] More information on TRI.NET is available at http://www.epa.gov/tri/tridotnet/index.html.
[12] More information on TRI-CHIP is available at http://www.epa.gov/tri/tri-chip/.
[13] More information on MyRTK is available at http://www.epa.gov/tri/myrtk/.
[14] More information on EDF Scorecard is available at http://scorecard.goodguide.com/.
[15] More information on Envirofacts Warehouse is available at http://www.epa.gov/enviro/.

The research community in the US has paid attention to the effects of environmental regulations on pollution. Researchers have also considered whether good environmental performance makes economic sense in the capital markets.

The markets are indeed responsive to environmental information. According to Konar and Cohen, public companies experienced large stock price declines on the day that TRI data was released. Those firms subsequently made more drastic efforts to reduce emissions than did their industry peers.[16] Moreover, Konar and Cohen have estimated an extraordinary $34 million increase in public company market-value for every 10% reduction in emissions of toxic chemicals.[17]

Besides the financial markets, the real estate market also values environmental information. For example, Christopher S. Decker and colleagues did a study on the effects of public TRI data on the residential housing market in Douglas County, Nebraska. They found that TRI releases had a negative impact on housing prices. Moreover, this housing market was substantially more sensitive to TRI pollutant releases than it was to regulated pollutant releases.[18]

Beyond economic benefits, there are also the obvious health benefits of informing a community about local pollutants. For example, on average county-level decreases in various categories of TRI-reported pollutants saved more than 13,800 infant lives between 1989 and 2002.[19] Using $1.8M, the low-end of the range for the value of a statistical life that is typically used by the EPA, the savings in lives would be valued at approximately $25B.[20] Thus, TRI creates strong incentives for US businesses to become clean and the resulting pollution reduction has generated tremendous health and social benefits in the US.

C. United Kingdom: Pollution Inventory (PI) & Pollutant Release and Transfer Register (PRTR)

Both the Pollution Inventory (PI) and the Pollutant Release and Transfer Register (PRTR) of the UK cannot be separated from the institutional evolution in Europe to enhance public access to information, participation in the decision-making process and access to justice. Before the 1998 Aarhus Convention,[21] the Council of the European Union built requirements on disclosure of information into the environmental permitting processes for new installations and/or substantial changes before the competent authority reaches its decision. Furthermore, member states were asked to submit data to the Commission that would be

[16] Mark A. Cohen and Shameek Konar, "Information as Regulation: The Effect of Community Right to Know Laws on Toxic Emissions," Journal of Environmental Economics and Management 32 (1):109-124 (1997).

[17] Ibid.

[18] Christopher S. Decker, Donald A. Nielsen and Roger P. Sindt, "Residential Property Values and Community Right-to-Know Laws: Has the Toxics Release Inventory Had an Impact?" Growth and Change 36 (1):113-133 (2005).

[19] Nikhil Agarwal, Chanont Banternghansa and Linda T. M. Bui, "Toxic Exposure in America: Estimating Fetal and Infant Health Outcomes," Federal Reserve Bank of St. Louis Working Papers: 2009-16 (2009).

[20] Ibid.

[21] The UNECE Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters, signed June 25, 1998, effective October 30, 2001.

published, every three years, in an inventory of the principal emissions and sources responsible.[22] In 2003, after taking into account (1) the 1996 OECD Council Recommendation on Implementing Pollutant Release and Transfer Registers, (2) the work of the Inter-governmental Forum on Chemical Safety, in particular the 2000 Bahia Declaration on Chemical Safety, and (3) the Plan of Implementation of the 2002 World Summit on Sustainable Development, which encourages the development of coherent, integrated information on chemicals (through mechanisms such as national pollutant release and transfer registers), the United Nations Economic Commission for Europe (UNECE) adopted the PRTR Protocol. The Protocol is meant to enhance public access to information through the establishment of coherent, integrated and nationwide PRTRs that could facilitate public participation in environmental decision-making as well as contribute to the prevention and reduction of pollution in the environment.[23]

In line with those conventions and protocols, the PI now has seven years of annual records of pollution from major industrial sites regulated by governments in both England and Wales. The public can search the PI using the "What's in your backyard?" service provided by the Environment Agency on the PI webpage. There are also some graphs, maps and analyses of the data available in the pollution inventory data section.[24]

Altogether, 80 pollutants are covered in the PRTR and sources emitting an amount over the threshold specified for each pollutant have to either report online or download and fill out a paper form. The PRTR website and database are publicly accessible and have the following query capabilities: (1) facility, including the facility's parent company where applicable, and its geographical location, including the river basin; (2) activity; (3) pollutant or waste, as appropriate; (4) each environmental medium (air, water, land) into which pollutants are released; (5) off-site transfers of waste and their destination, as appropriate; and (6) off-site transfers of pollutants in waste water. Besides pollution information, the PRTR website also provides information on each pollutant covered, including what it is, where it comes from, and how it may affect human health.[25]

D. India: Green Rating Project (GRP)

The Green Rating Project (GRP) was initiated in 1996 by the Center for Science and Environment (CSE), an Indian NGO. The overall objective is to rate the environmental performance of industrial firms and disseminate the results to get "Indian industries to develop and implement their own sustained eco-friendly practices to preserve the environment."[26]

[22] "Council Directive 96/61/EC concerning Integrated Pollution Prevention and Control (IPPC Directive, 1996)," Article 15.

[23] "The Protocol on Pollutant Release and Transfer Registers", United Nations Economic Commission for Europe (UNECE), adopted May 21, 2003. More information is available at http://www.unece.org/env/pp/prtr.html. Last accessed 11 January 2012.

[24] More information on the Pollution Inventory is available at the Environment Agency webpage http://www.environment-agency.gov.uk/business/topics/pollution/32254.aspx. Last accessed 12 November 2011.

[25] More information on the UK PRTR is available at http://prtr.defra.gov.uk/. Last accessed 12 November 2011.

[26] More information is available on the Center for Science and Environment website http://www.cseindia.org/node/277. Accessed 12 November 2011.

The GRP team in the CSE systematically collects information and prepares an inventory of companies' environmental performance and further analyzes this information to compare and evaluate firms' environmental performance using a "five-leaf" scale. Because different industries require different measures for pollution prevention and treatment, the GRP adopts an industry-specific approach for both data collection and evaluation. Primary data collection consists of a corporate policy questionnaire, a sector specific questionnaire and site-visits to the corporate headquarters as well as factory sites. If a company does not disclose any information, it will receive the lowest possible rating. Secondary data comes from comments and feedback from different sources such as local communities, local media, local NGOs, and respective state pollution control boards.

For both primary as well as secondary data collection, the project has developed a country-wide Green Rating Network (GRN). The GRN includes volunteers from across the country who inspect the production units of companies and undertake surveys to ascertain the perception of local communities, NGOs, media, etc., on the environmental performance of companies. The criteria used for screening and selection of the Green Rating Inspectors are educational background, experience and proximity to the selected companies. Currently, there are approximately 300 GRN volunteers spread across the country. The network consists of highly qualified professionals, energetic technical students and high-level government employees, all driven by a sense of urgency to address India's environmental problems.

The data is updated and firms are evaluated once every three years. Results are disseminated via high profile events with prominent persons such as the former Indian Prime Minister releasing scores and distributing "leaf" awards. The publicly available rating information empowers communities and markets to enter into a companies' calculation of its bottom line for reputational concerns and associated economic consequences. For this reason, the GRP first targets multinational companies and major Indian companies on the stock market that are conscious about public image, especially those companies that are trying to raise funds abroad. They are also the ones with the means available to obtain world class technology. Large industries are generally trend-setters and, as industry leaders, can set standards for other companies to follow, thus influencing future industrialization within the country. Furthermore, the GRP aids better formulation of regulations and policies by the regulatory authorities and government to control industrial pollution.[27]

Studies have been carried out to examine the impact of GRP:

- A study was carried out to examine the impact of environmental ratings on stock prices for large pulp and paper, auto, and chlor alkali firms, which are three of the four sectors rated by the GRP. The authors found that announcements of weak environmental performance are generally followed by abnormal changes in stock price. Furthermore, a positive correlation was found between increases in a firm's stock prices and the level of the firm's environmental performance.[28]
- GRP drove significant reductions in pollution discharge among dirty plants but not among cleaner ones. Also, plants in wealthier communities were more responsive to GRP ratings, as were single-plant firms.[29]

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[27] Ibid.
[28] Shreekant Gupta and Bishwanath Goldar, "Do Stock Markets Penalize Environment-Unfriendly Behaviour? Evidence from India", Ecological Economics 52 (1):81-95 (2005).
[29] Nicholas Powers et al., "Does Disclosure Reduce Pollution? Evidence from India's Green Rating Project", Environmental & Resource Economics 50 (1):131-155 (2011).

Figure 41 summarizes and compares industrial pollution information disclosure programs in the four reviewed countries.

Figure 41. Comparing industrial pollution information disclosure programs in Japan, the United States, the United Kingdom and India.

	Japan	United States	United Kingdom	India
Program	Pollutant Release and Transfer Register (PRTR)	Toxics Release Inventory (TRI)	Pollutant Release and Transfer Register (PRTR) Pollution Inventory (PI)	Green Rating Project (GRP)
Year of start	2003	1989	2003	1996
Regulator	Ministry of Environment	Environmental Protection Agency	Department for Environment, Food and Rural Affairs	None
Legal requirements	Mandatory	Mandatory	Mandatory	Voluntary
What information is to be disclosed	• Quantity of the releases of Class I chemical substances (354 substances) to the environment and their transfer in the waste by business operators; • Material Safety Data Sheet (MSDS) to the counterpart when transactions of Class I and Class II (81 substances) designated chemical substances (and products containing them) occurred between business operators.	• Basic information identifying the facility; • Environmental permits held; • Amounts of each of more than 650 listed chemicals disposed of or released into the environment at the facility; • Amounts of each chemical sent from the facility to other locations for recycling, energy recovery, treatment, disposal, or other release; • Amounts of each chemical recycled, burned for energy recovery, or treated at the facility; • Maximum amount of chemical present on-site at the facility during year; • Types of activities conducted at the facility involving the toxic chemical; • Source reduction activities.	• Facility, including the facility's parent company where applicable, and its geographical location, including the river basin; • Activity; • Discharge of each of the 80 pollutants or waste over the threshold; • Each environmental medium (air, water, land) into which the pollutant is released; • Off-site transfers of waste and their destination(s), as appropriate; • Off-site transfers of pollutants into waste water.	• An overall rating of firm specific environmental performance in the pulp and paper industry (1999), automobile (2001) and chlor-alkali (2002), and cement (N/A) sector; • Rating top 200 Indian companies from 18 sectors on energy, GHG emissions & water.
Where is the information made publicly available	PRTR data is available online.	TRI data is available online.	PRTR data is available online.	Results are disseminated via high profile events with prominent persons such as the former Indian Prime Minister releasing the scores and distributing the "leaf" awards.
Implementer	Government	Government	Government	Non-governmental organization

It is important to note that, besides tailor-made industrial pollution information disclosure programs, many countries have also explicitly installed and enforced concerned parties' rights to request environmental information held by the government. When taken together, these two initiatives form a comprehensive environmental information disclosure system.[30] Furthermore, corporate environmental reporting has been gradually integrated into the requirements by security exchange commissions on companies listed on stock exchanges.[31]

In summary, effective mandatory (i.e., government-run) open environmental information systems need to meet the following three basic requirements:

- The regulators must pass legislation to create basic mechanisms, such as a PRTR system, and a process to ensure proper collection, handling and publication of environmental information;
- Must allow for and protect the public's right to apply for environmental information as well as provide full disclosure of the government's environmental management information; citizens must have the right to access and use environmental information to supervise environmentally harmful behavior;
- Use public environmental information to distinguish between environmentally friendly enterprises and products within the consumer goods and financial markets, thus factoring environmental management and reporting into important business decisions.[32]

In this way, those members of society who are willing to participate in environmental governance and pursue sustainable development goals can join forces to effectively promote environmental governance. Open environmental information systems can serve the following five stakeholders:

- For the public: Provides information to the public and promotes their understanding of pollutants and the effects of environmental conservation measures and their improvements; also, makes public participation in environmental governance possible and serves as a useful supplement to the government's environmental management system.
- For the government: Helps to monitor industrial pollution using a relatively inexpensive method (i.e., industry self-reporting) and provides a tool for the government to make informed demands on facilities to improve their environmental performance; helps the government to determine priorities in administrative measures for pollutants.
- For the market: Disclosing the environmental impacts of products, services and production processes allows consumers and investors with differing preferences to identify and distinguish market products and services in order to make environmentally-friendly purchasing and investment decisions.
- For polluters: Encourages an enterprise to take initiative and carefully manage pollution emissions, to remove barriers to environmental protection work, and to improve corporate environmental performance.
- For academics: Publically available data improves the accuracy of research and analysis to evaluate, among other things, industry activities and associated environmental health risks, and to find solutions for environmental problems.

[30] Margaret Bowman, "The Role of the Citizen in Environmental Enforcement", Environmental Law Institute's Environmental Program for Central and Eastern Europe, Washington, DC (1992).
[31] Denis Cormier and Michel Magnan, "Environmental Reporting Management: a Continental European Perspective", Journal of Accounting and Public Policy 22 (1):43-62 (2003).
[32] Paul Ashcroft and Murphy L. Smith, "Impact of Environmental Regulation on Financial Reporting of Pollution Activity: A Comparative Study of U.S. and Canadian Firms", Research in Accounting Regulation 20:127-153 (2008).

III. China: Toward the Next Step of Open Environmental Information

Principle 10 of the 1992 Rio Declaration released by the United Nations Conference on Environment and Development heralded a new era of environmental governance. Governments have expressed their intent to support the public's access to environmental information, ability to participate in environmental decision-making and right to seek judicial relief on environmental matters. In keeping with global trends, between 1999 and 2000, China initiated several open environmental information pilot projects in Zhejiang and Jiangsu provinces as well as Hohhot, Inner Mongolia.[33]

Inspired by experience in Zhenjiang city, the State Environmental Protection Administration (SEPA, upgraded to Ministry of Environmental Protection (MEP) in 2008) published a Ministerial Circular in November 2005 to formally introduce technical guidelines and require all urban municipalities in China to rate industrial environmental performance and to make that information publicly available by 2010.[34] On 5 April 2007, the State Council issued the first "Open Government Information Decree" in the history of modern China.[35] One week later, MEP enacted its "Measures on Open Environmental Information (Trial)." There is no doubt that the Chinese central government has placed strong emphasis on environmental information transparency and openness. Since 2011, for example, the Chinese central government has made progress that is not limited to the following examples:

- MEP issued notice No. 56 [2011], calling for enhanced pollution prevention and control by manufacturers of lead acid batteries and secondary lead. Article 5 requires the publication of information by those producers and welcomes monitoring by local communities.[36]
- In September 2011, MEP released a bulletin to all provinces, autonomous regions and municipalities stating that, in accordance with an earlier notice's requirements,[37] the government had published in July an online list of lead-acid battery companies (processing, assembly and recycling) that were under investigation and their respective environmental remediation steps so the public could supervise and monitor the situation. Guangdong, among other provinces, conducted detailed observations into industries guilty of emissions violations. Anhui, Jiangxi and Heilongjiang provinces published detailed accounts of polluting industries in local newspapers.[38]
- MEP will establish an open environmental information system detailing environmental protection campaigns that target key industries in need of remediation. MEP requests that the environmental protection departments in all of the provinces, autonomous regions and municipalities keep track of key industries and post lists of lead-acid battery companies and their updated remediation efforts in an online column by November 30, 2011. Regular updates should be made in June and November[39] of each year and posted on the link available at the MEP website.[40]

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[33] Li, Wanxin. 2011. Self-motivated vs. forced disclosure of environmental information in China—a comparative case study of the pilot disclosure programs. The China Quarterly 206:331-351.
[34] "Opinions on Accelerating the Evaluation of Corporate Environmental Behavior," State Environmental Protection Administration [2005] No. 125 2005.
[35] "The People's Republic of China Open Government Information Regulations," The People's Republic of China State Council Order No. 492, published April 5, 2007, effective May 1, 2008.
[36] "Strengthening Lead-acid batteries and Secondary Lead Industry Pollution Prevention Work," MEP notice No. 56 [2011].
[37] "In-depth Remediation of Illegally Polluting Companies and Assurance of Public Health and Environmental Protection," MEP notice No. 41 [2011].
[38] "Disclosure of Environmental Status of Lead-Acid Battery Industry," MEP Circular No. 1041 [2011].
[39] Ibid.
[40] More information is available at http://hjj.mep.gov.cn/zdhy/.

- In May 2011, MEP started post-IPO environmental supervision, targeting publicly listed companies that discharge heavy metals. Altogether, there were ten major tasks for MEP to supervise, one of which was to require targeted companies to disclose environmental information and publish annual environmental reports.[41]
- Following an initial announcement in 2010, the Ministry of Industry and Information Technology (MIIT), issued another announcement in 2011 that it would publish a list of outdated production companies that would be phased out.[42]
- MEP recently promulgated the "Environmental Management of Hazardous Chemicals: Registration Approach (Draft)," which requires declaration and disclosure of key toxic chemical releases and transfers.[43] We look forward to both the adoption of the approach and to promoting the establishment of a PRTR system.

While the 2011 PITI assessment reveals that many of the 113 cities are still in the initial stages of open environmental information, it is encouraging to see that, at the national level, comprehensive progress has been made. Also, the 2011 PITI assessment found that some cities' progress exhibits a positive trend, which shows that open environmental information is gaining momentum in China. As a matter of fact, carbon reduction, industry upgrades, and resource utilization efficiency go hand-in-hand with pollution reduction. Furthermore, one of the leading goals in the Twelfth Five-Year Plan is low carbon development. PRTR could also be used in China to track carbon emissions, which allows for better informed planning and the achievement of low carbon development goals. If carefully designed and strictly implemented, a system of open environmental information in China (specifically some form of PRTR system that is suitable for China) could help extend the government's reach in its pursuit of sustainable development goals by uniting the efforts of different actors in society.

[41] "Ten Aspects Leading MEP's Investigation into Heavy Metal Pollution by Publicly Listed Companies," China Environmental Newspaper. More information available at http://www.zhb.gov.cn/zhxx/hjyw/201106/t20110617_212653.htm. Last accessed January 8, 2012.

[42] "MIIT Announcement: 2011 List of Outdated Production Companies to be Phased Out." More information is available at http://www.miit.gov.cn/n11293472/n11293832/n11293907/n11368223/13928592.html. Last accessed January 8, 2012.

[43] "Notice Requesting Comments on 'Environmental Management Measures for Registration of Hazardous Chemicals,'" MEP Circular No. 1212 [2011]. More information is available at http://www.zhb.gov.cn/gkml/hbb/bgth/201110/t20111021_218628.htm. Last accessed on January 8, 2012.

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Appendix I

PITI Assessment Methodology

I. Assessment Objective

113 cities were chosen as assessment targets for the 2011 PITI. The scope of the assessment is identical to that of the 2009-2010 PITI. The 113 cities included 110 Key State Environmental Protection Cities and were extensively distributed across the eastern, central and western regions of the country.[44]

Figure 42: PITI Index Assessment Distribution

[44] The Key State environmental protection cities are designated in China's 11th Five-Year Plan for Environmental Protection. Three cities in the PITI assessment - Dongguan, Yancheng, and Erdos - are not Key State environmental protection cities.

II. PITI Assessment Criteria

The 2011 assessment criteria remained the same as that of 2009-2010. Each of the cities were assessed according to the following eight "assessment criteria":

Each city was evaluated on open environmental information performance for eight metrics, which all directly or indirectly relate to the environmental performance of polluting enterprises:

- **Records of Enterprise Violations (28 pts):** As required by the Ministry of Environmental Protection (MEP) Measures on Open Environmental Information (MEP Measures), open environmental information on records for various types of facility violations, including administrative penalties and enforcement actions taken.
- **Results of "Enforcement Campaigns" Against Polluting Enterprises (8 pts):** Open environmental information on the results of environmental protection bureau enforcement campaigns, such as campaigns targeting specific sectors, regions, or facilities, or ordering cessation of violations by designated deadlines.
- **Clean Production Audit Information (8 pts):** As required by the MEP Measures, open environmental information about two types of information: (i) lists of enterprises for which the government has enforced clean production audits; (ii) emissions data from enterprises selected to undergo clean production audits, are required by law to be released one month after the clean production audit. This is China's only legal requirement for open environmental information about facility-level pollutant emissions/discharge data.
- **Enterprise Environmental Performance Ratings (8 pts):** Open environmental information on enterprise environmental performance ratings in accordance with MEP guidelines, which set forth a color-coded system representing levels of environmental performance: very good (green), good (blue), average (yellow), poor (red), and very poor (black). This system does not require disclosure of factory-level emissions data.
- **Disposition of Verified Petitions and Complaints (18 pts):** As required by the MEP Measures, open environmental information on petitions and complaints, as well as their handling, including the content, target, and result of complaints and petitions, as well as general statistics on petition acceptances, investigations, and handling results.
- **Environmental Impact Assessment (EIA) Reports and Project Completion Approvals (8 pts):** As required by the MEP Measures, open environmental information on: (i) the public comment draft of EIA reports and (ii) Project completion reports, which typically include useful information about allowable enterprise emission levels.

- **Discharge Fee Data (4 pts):** Open environmental information on discharge fee data, including the basis for such fees, standards and procedures for fees levied, fees owed compared with actual fees collected, and any waivers or discounts granted to facilities.
- **Response to Public Information Requests (18 pts):** Response to public information requests and whether the local environmental protection bureau has established a standard and comprehensive system for responding to public information requests, including open environmental information on request procedures, provision of accurate contact information, the establishment of special offices or personnel for handling public information requests, standard and timely response to requests, and efforts to improve public convenience in making information requests.

TOTAL: 100 pts

Each of the eight metrics is assessed according to four criteria:

- Systematic Publication: Rating the comprehensiveness and continuity of information availability.
- Timeliness: Rating whether information availability is timely and in accordance with relevant legal requirements.
- Comprehensiveness: Rating the level of detail, or completeness, of available information (e.g., whether particular records include required information – such as names of enterprises, types of pollutants, etc.).
- User-Friendliness: Rating whether the manner in which information is presented or provided is convenient for the public.

A detailed description of the assessment criteria can be found online at:

- http://china.nrdc.org/zh-hans/library/PITI
- http://www.ipe.org.cn/uploadFiles/2009-07/1248835436668.pdf

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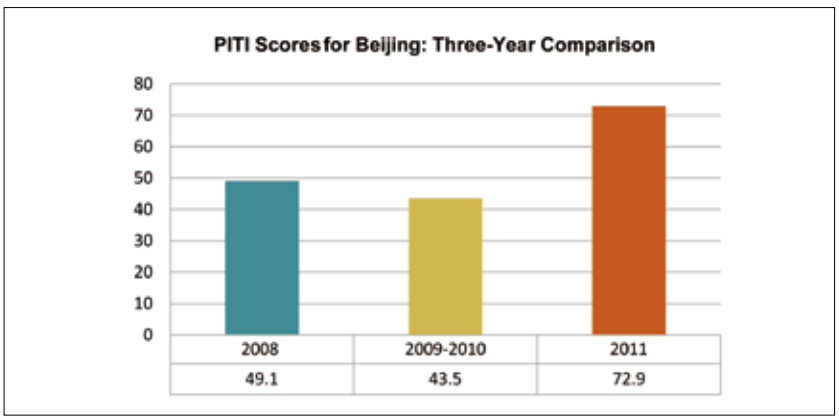
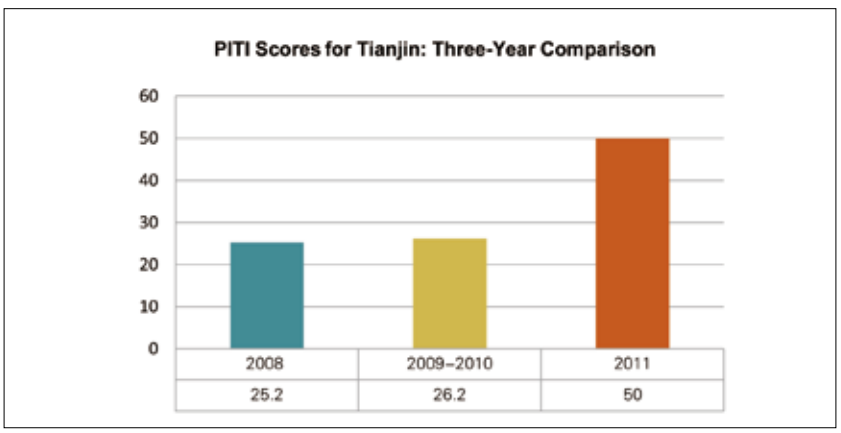
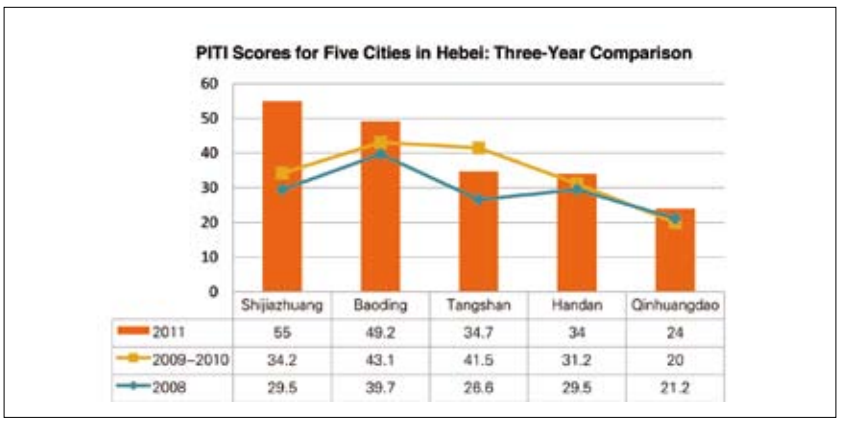
Appendix II

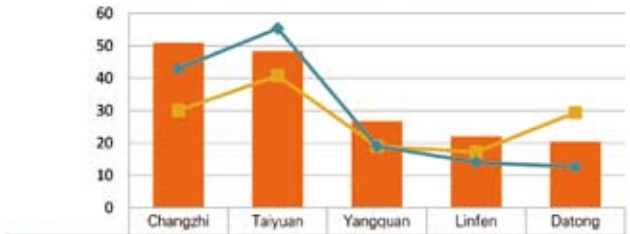
Year-Over-Year Comparison of PITI Scores of Cities within Each Province





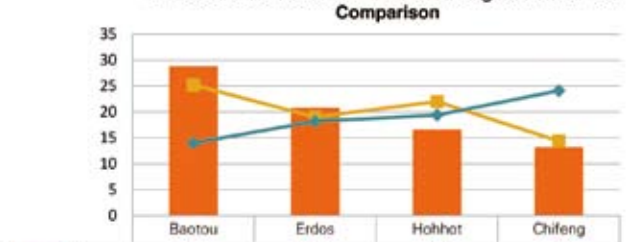


PITI Scores for Five Cities in Shanxi: Three-Year Comparison



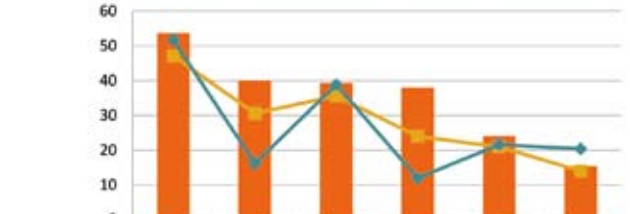
	Changzhi	Taiyuan	Yangquan	Linfen	Datong
2011	51	48.3	26.7	22	20.4
2009–2010	30	40.8	19	17.2	29.4
2008	42.9	55.4	19	14	12.6

PITI Scores for Four Cities in Inner Mongolia: Three-Year Comparison



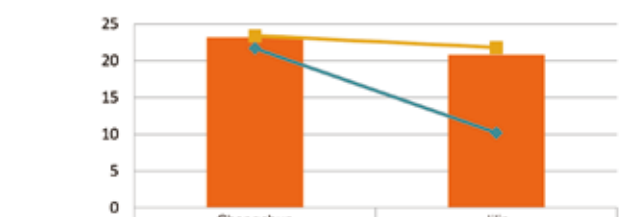
	Baotou	Erdos	Hohhot	Chifeng
2011	28.8	20.8	16.6	13.2
2009–2010	25.2	19	22	14.4
2008	14	18.2	19.4	24.1

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

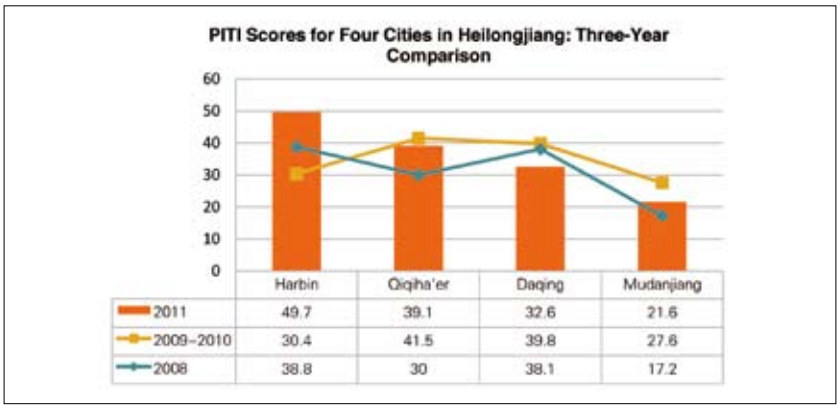


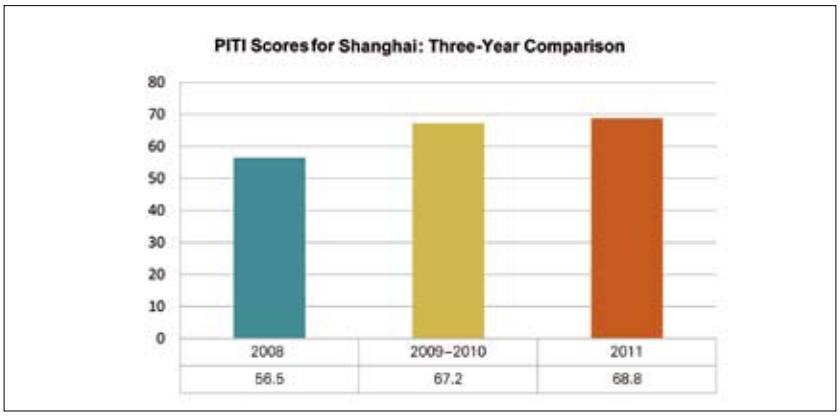
	Dalian	Anshan	Shenyang	Benxi	Fushun	Jinzhou
2011	53.7	40	39.3	38	24.1	15.4
2009–2010	47.1	30.6	35.6	24	21	14
2008	51.7	16.2	38.8	12	21.6	20.4

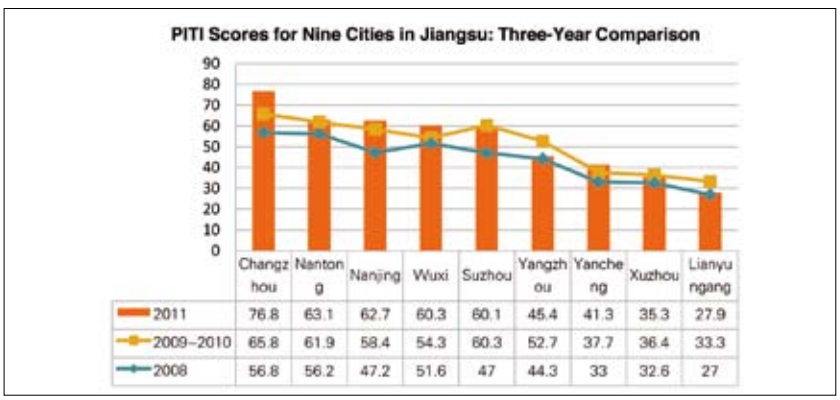
PITI Scores for Two Cities in Jilin: Three-Year Comparison

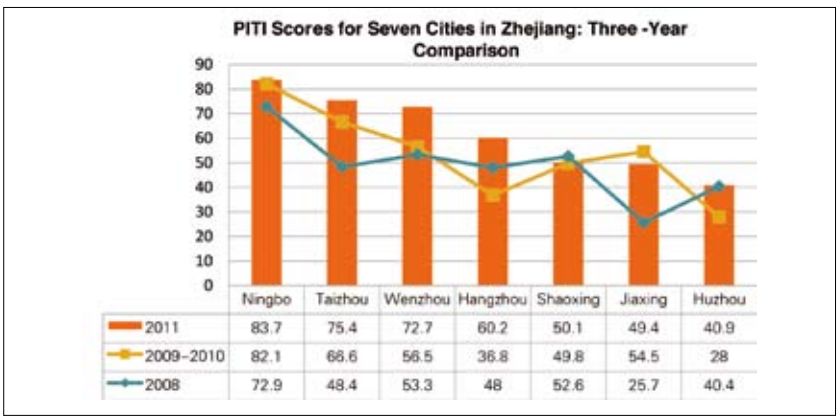


	Changchun	Jilin
2011	23.2	20.8
2009–2010	23.4	21.8
2008	21.7	10.2

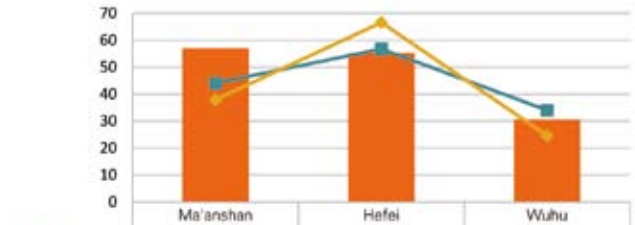

PITI Scores for Four Cities in Heilongjiang: Three-Year Comparison
60
50
40
30
20
10
0
Harbin
Qiqiha'er
Daqing
Mudanjiang
2011
49.7
39.1
32.6
21.6
2009–2010
30.4
41.5
39.8
27.6
2008
38.8
30
38.1
17.2


PITI Scores for Shanghai: Three-Year Comparison
80
70
60
50
40
30
20
10
0
2008
2009–2010
2011
56.5
67.2
68.8


PITI Scores for Nine Cities in Jiangsu: Three-Year Comparison
90
80
70
60
50
40
30
20
10
0
Changzhou
Nantong
Nanjing
Wuxi
Suzhou
Yangzhou
Yancheng
Xuzhou
Lianyungang
2011
76.8
63.1
62.7
60.3
60.1
45.4
41.3
35.3
27.9
2009–2010
65.8
61.9
58.4
54.3
60.3
52.7
37.7
36.4
33.3
2008
56.8
56.2
47.2
51.6
47
44.3
33
32.6
27

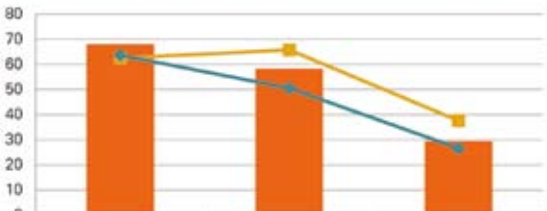

PITI Scores for Seven Cities in Zhejiang: Three -Year Comparison
90
80
70
60
50
40
30
20
10
0
Ningbo
Taizhou
Wenzhou
Hangzhou
Shaoxing
Jiaxing
Huzhou
2011
83.7
75.4
72.7
60.2
50.1
49.4
40.9
2009–2010
82.1
68.6
56.5
36.8
49.8
54.5
28
2008
72.9
48.4
53.3
48
52.6
25.7
40.4

PITI Scores for Three Cities in Anhui: Three-Year Comparison



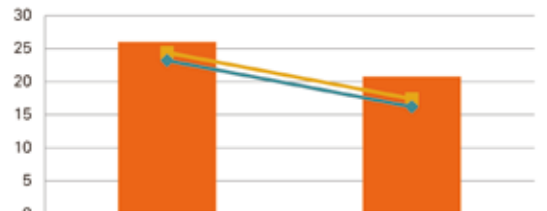
	Ma'anshan	Hefei	Wuhu
2011	57.1	55.2	30.6
2009–2010	44	56.8	34
2008	37.9	66.6	24.6

PITI Scores for Three Cities in Fujian: Three-Year Comparison



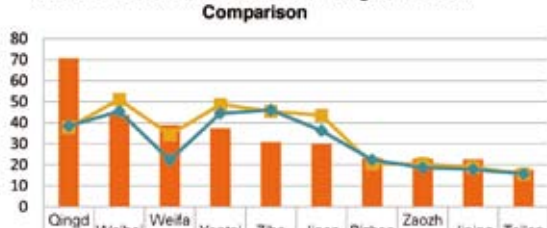
	Fuzhou	Quanzhou	Xiamen
2011	68.1	58.4	29.4
2009–2010	62.5	65.8	37.6
2008	63.7	50.6	26.6

PITI Scores for Two Cities in Jiangxi: Three-Year Comparison

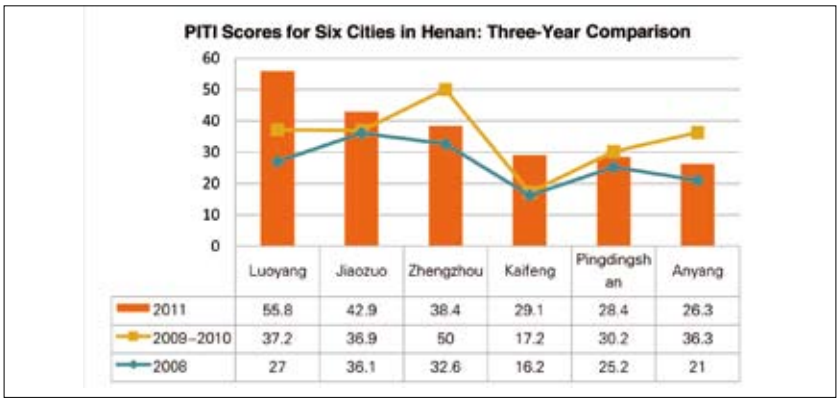


	Nanchang	Jiujiang
2011	26	20.8
2009–2010	24.4	17.4
2008	23.2	16.2

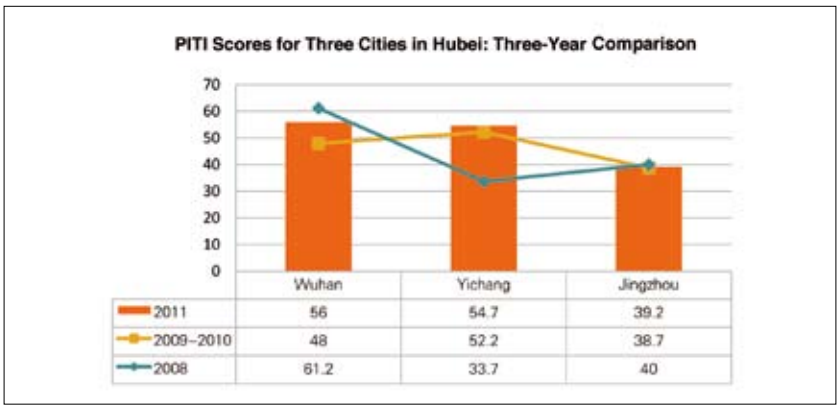
PITI Scores for Ten Cities in Shandong: Three-Year Comparison



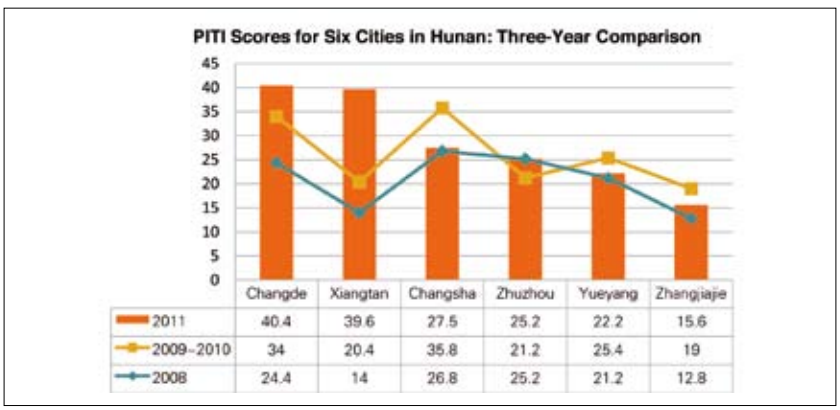
	Qingdao	Weihai	Weifang	Yantai	Zibo	Jinan	Rizhao	Zaozhuang	Jining	Tai'an
2011	70.6	43.8	38.8	37.3	30.8	30	23.2	22.8	22.6	17.6
2009–2010	37.7	51.1	34.2	48.7	45.4	43.5	20.4	20.4	18.8	15.6
2008	38.4	45.4	22.2	44.5	46	36.2	22.3	18.6	17.8	15.6



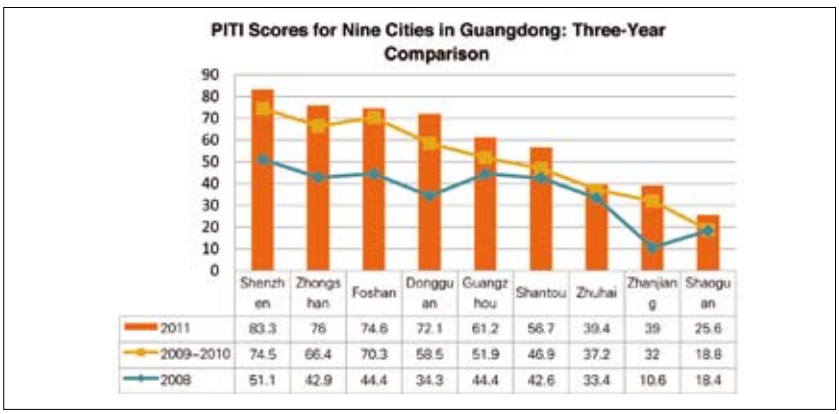
	Luoyang	Jiaozuo	Zhengzhou	Kaifeng	Pingdingshan	Anyang
2011	55.8	42.9	38.4	29.1	28.4	26.3
2009–2010	37.2	36.9	50	17.2	30.2	36.3
2008	27	36.1	32.6	16.2	25.2	21



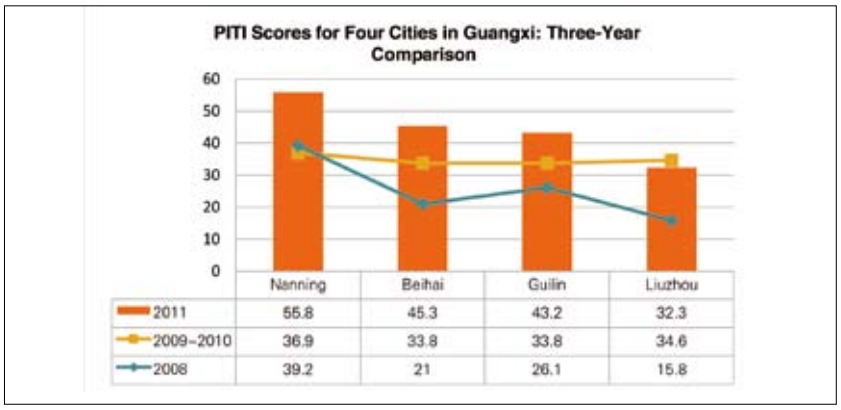
	Wuhan	Yichang	Jingzhou
2011	56	54.7	39.2
2009–2010	48	52.2	38.7
2008	61.2	33.7	40

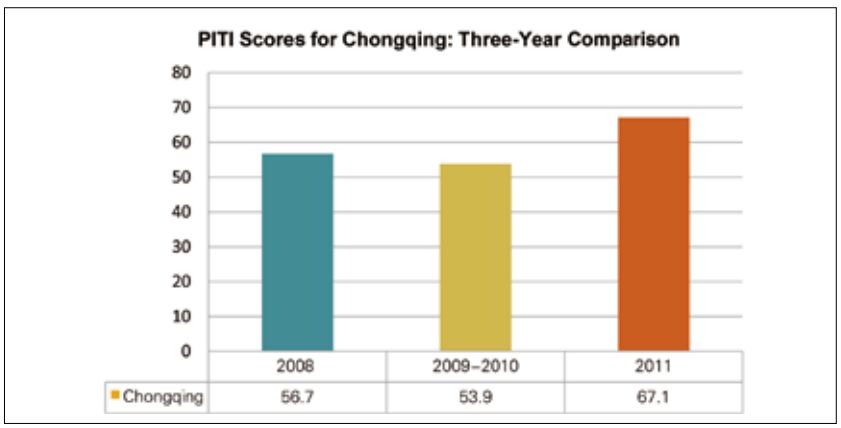


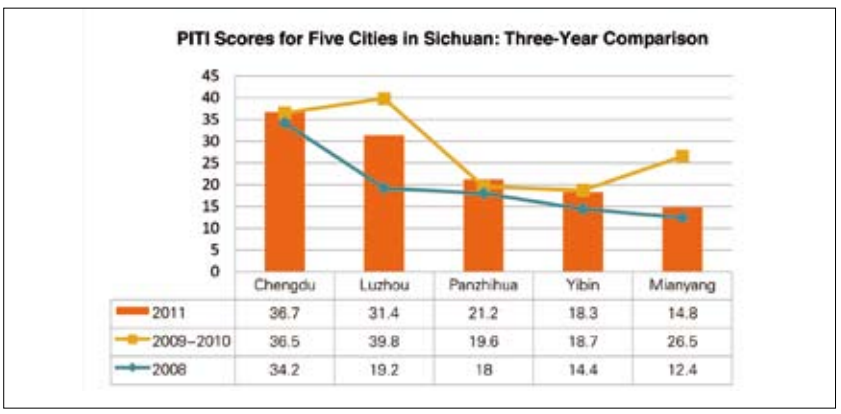
	Changde	Xiangtan	Changsha	Zhuzhou	Yueyang	Zhangjiaje
2011	40.4	39.6	27.5	25.2	22.2	15.6
2009–2010	34	20.4	35.8	21.2	25.4	19
2008	24.4	14	26.8	25.2	21.2	12.8

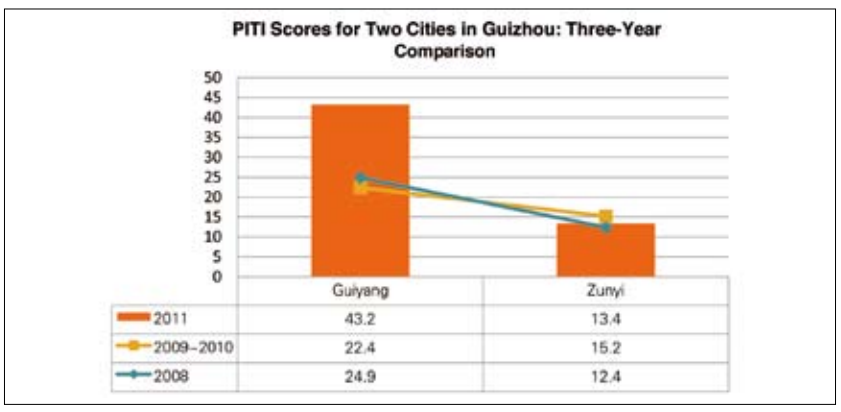


	Shenzhen	Zhongshan	Foshan	Dongguan	Guangzhou	Shantou	Zhuhai	Zhanjiang	Shaoguan
2011	83.3	76	74.8	72.1	61.2	56.7	39.4	39	25.6
2009–2010	74.5	66.4	70.3	58.5	51.9	46.9	37.2	32	18.8
2008	51.1	42.9	44.4	34.3	44.4	42.6	33.4	10.6	18.4

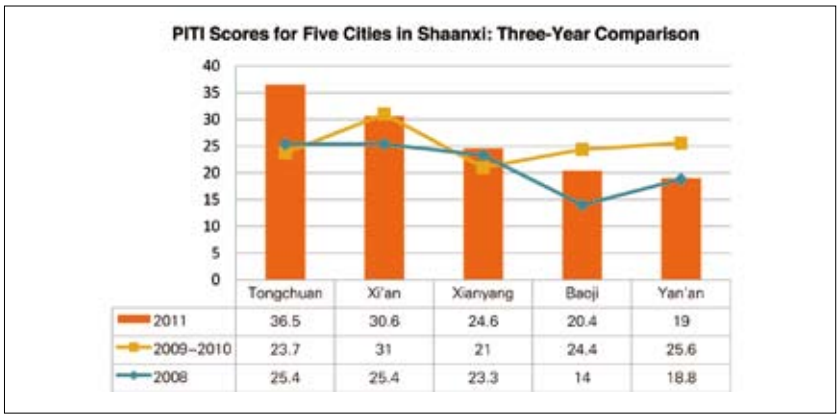

PITI Scores for Four Cities in Guangxi: Three-Year Comparison
60
50
40
30
20
10
0
Nanning
Beihai
Guilin
Liuzhou
2011
55.8
45.3
43.2
32.3
2009–2010
36.9
33.8
33.8
34.6
2008
39.2
21
26.1
15.8

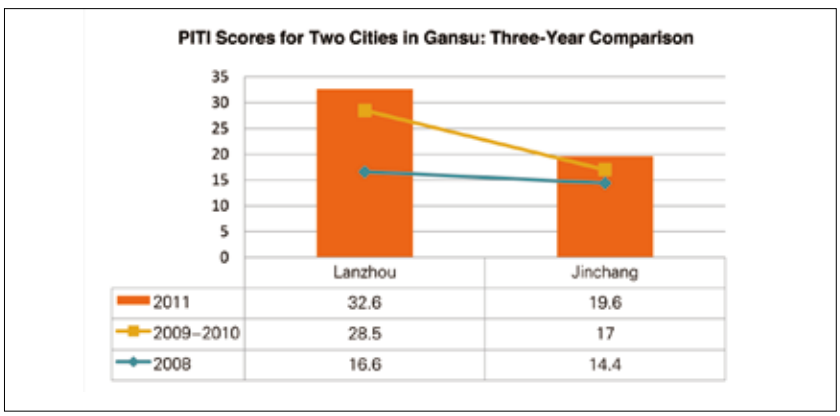

PITI Scores for Chongqing: Three-Year Comparison
80
70
60
50
40
30
20
10
0
2008
2009–2010
2011
Chongqing
56.7
53.9
67.1

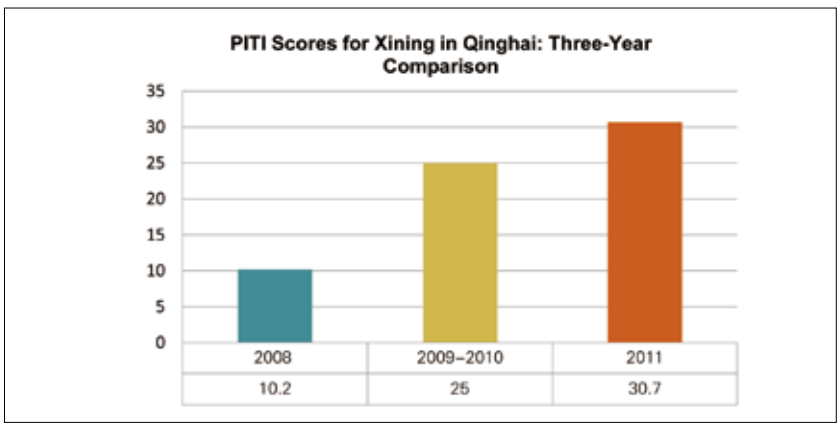

PITI Scores for Five Cities in Sichuan: Three-Year Comparison
45
40
35
30
25
20
15
10
5
0
Chengdu
Luzhou
Panzhihua
Yibin
Mianyang
2011
36.7
31.4
21.2
18.3
14.8
2009–2010
36.5
39.8
19.6
18.7
26.5
2008
34.2
19.2
18
14.4
12.4

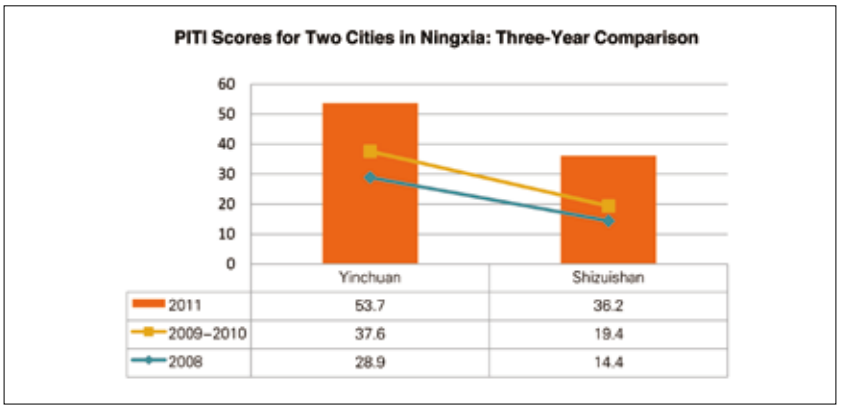

PITI Scores for Two Cities in Guizhou: Three-Year Comparison
50
45
40
35
30
25
20
15
10
5
0
Guiyang
Zunyi
2011
43.2
13.4
2009–2010
22.4
15.2
2008
24.9
12.4


PITI Scores for Two Cities in Yunnan: Three-Year Comparison
60
50
40
30
20
10
0
Kunming
Qujing
2011
45
19
2009–2010
34.6
18.9
2008
49.4
24.8


PITI Scores for Five Cities in Shaanxi: Three-Year Comparison
40
35
30
25
20
15
10
5
0
Tongchuan
Xi'an
Xianyang
Baoji
Yan'an
2011
36.5
30.6
24.6
20.4
19
2009–2010
23.7
31
21
24.4
25.6
2008
25.4
25.4
23.3
14
18.8


PITI Scores for Two Cities in Gansu: Three-Year Comparison
35
30
25
20
15
10
5
0
Lanzhou
Jinchang
2011
32.6
19.6
2009–2010
28.5
17
2008
16.6
14.4


PITI Scores for Xining in Qinghai: Three-Year Comparison
35
30
25
20
15
10
5
0
2008
2009–2010
2011
10.2
25
30.7


PITI Scores for Two Cities in Ningxia: Three-Year Comparison
60
50
40
30
20
10
0
Yinchuan
Shizuishan
2011
53.7
36.2
2009–2010
37.6
19.4
2008
28.9
14.4


PITI Scores for Two Cities in Xinjiang: Three-Year Comparison
40
35
30
25
20
15
10
5
0
Urumqi
Kelamayi
2011
35.8
18.4
2009–2010
37.9
14.8
2008
32.7
11.2

Appendix III

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