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Final Report for:

United Nations Industrial Development Organization

Energy Conservation and GHG Emissions Reduction in Chinese TVEs

Phase II

Project No: EG/CPR/99/G31

Contract No: P.16001380

Regional Forum on Energy Efficiency in Small and Medium Enterprises and Facilitation of a Media Tour

Submitted By

Hou-yuan Energy and Environmental Protection Technology Co. Ltd.

June 12, 2007

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Contents

1.0 Forward

This document is the Final Report of the subcontract of "Regional Forum on Energy Efficiency in Small and Medium Enterprises and Facilitation of a Media Tour" (Contract No. 16001380). The report summarizes the progress of the forum during May 16 – 21, 2007, which Hongyuan Energy and Environmental Protection Technology Co. Ltd. (hereafter the Contractor), submitted to the UNIDO HQs in response to the substantive Terms of Reference date April 2007 to provide services to execute the Forum/Tour in China.

2.0 Background

Since the inception of the project "Energy Conservation and Greenhouse Gas Emissions Reduction in Chinese Township and Village Enterprises (TVEs) – Phase II" in 2001, remarkable results have been achieved. The project innovatively created a series of institutions, including the Revolving Capital Fund (RCF), Policy Implementation Committee (PIC)/Local Policy Implementation Committee (LPIC), Hongyuan Energy and Environmental Protection Co. Ltd., which are playing a significant role in assisting TVEs in these four sub-sectors to remove market, policy, technological and financial barriers to energy efficiency.

The project is on track to achieve direct project savings far beyond those projected in the project's design documents. The positive results and their impact have been duly recognized in China and other countries.

Eight out of the nine pilot projects in the four sub-sectors have been completed, while the other one is under implementation. Pilot technology and successful experiences have been duplicating and promoting in 118 replication projects with an energy saving of 809,000 tce/a, or a total CO2 emissions reduction of 2.018 million tones/a, far beyond the projected goals.

Beside the above mentioned activities conducted by PMO, independent replications are emerging:

- More than 200 TVE representatives participated in technical training organized by Xinjin Yongxing Shale Brick Company, a project pilot TVE
- People from more than 100 Chinese coking TVEs and over 10 foreign coking experts from Bangladesh, Thailand, India, etc. visited Gaoping Xinggao Coking Group
- People from over 50 cement companies visited the residue heat power plant at Shenhe Cement
- The new type EE brick kiln adopted by Lucun Brick Plant was widely recognized by more and more entrepreneurs in the same trade, and will be introduced by Government of Bangladesh

Key project stakeholders, e.g. MOA, UNIDO and the China GEF Office place great importance in broadly disseminating the best practice and experiences achieved in this project.

The Regional Forum on Promotion of Energy Efficiency in Small and Medium Enterprises and a Media Tour supported by TVE project, sponsored by MOA, UNDP China and UNIDO was designed to publicize and disseminate best practices, and share the successful results of the project with the neighboring countries and regions, thereby facilitate the cooperation between Chinese TVEs and other Asian SMEs for energy conservation and GHG emissions reduction.

3.0 Implementation of the Forum and Tour

Under the strong support of sponsors, the Forum and Tour was organized successfully during May 16 – 21, 2007. The Forum was held in 4 stars New Century Zhijiang Resort Hangzhou. More than 140 participants joined the forum including national and international media correspondents. There into, 38 of them joined the Tour and visited pilots and replications of TVE project in Zhejiang, Shanxi and Shaanxi Provinces.

The forum agenda, tour program and participant list see Annex 1, 2 and 3.

3.1 Opening Ceremony and Keynote Speeches

Mr. Mao Linsheng, the vice governor of Zhejiang province started the opening ceremony by addressing his congratulation to the Forum on behalf of the government of Zhejiang Province. He mentioned that rural economy of Zhejiang has been the top one in China for the past 22 years. On the other hand, Zhejiang is also an energy dependent province, 95% of primary energy supply need to be imported from outside. Energy efficiency improvement and environmental protection is always part of sustainable development strategy of this province. Mr. Mao welcomes all national and international participants coming to Zhejiang and wish this forum a great success.

Mr. Wei Chao'an, the vice minister of MOA addressed his keynote speech. He briefly introduced the history of TVE project, then introduced the national strategy of energy conservation and GHG emission reduction. He mentioned the energy consumption per unit GDP will reduce 20% during the eleventh "Five-Year Plan". Rural energy conservation and GHG emission reduction is not only an important part of national strategy, but also an important measure for improving rural ecological environment, agriculture production and living conditions of rural habitants. Mr. Wei affirmed that the TVE project made a good demonstration for energy conservation. The pilot and replication projects achieved energy conservation capacity 370,000 tce, and 920,000 tones of CO2 emission reduction. Mr. Wei emphasized that this forum is an important activity of national strategy not only for disseminating the experiences of TVE project but also for establishing a cooperative platform between TVEs/SMEs in China and neighboring countries.

Mr. Khalid Malik, UN Resident Coordinator in China and UNDP Resident Representative extended his warmest welcome to all participants. He pointed out the TVE project has produced impressive results going beyond the targets set out in the original design. Mr. Malik also expressed appreciation for the positive attitude of

Chinese government. He mentioned that climate change is a matter of common concern throughout the UN system. Energy efficiency and its adoption in the SME sector will play a critical role in our collective global efforts to mitigate climate change. He said "In China, the government issued its first-ever National Climate Change Impact Assessment Report earlier this year, showing the serious consequences climate change poses for food, water supplies and land."

Mr. Sajjad Ajmal, Representative and Head of UNIDO Regional Office (China, Mongolia, D.P.R. Korea and R.O. Korea) expressed his congratulations to the organizers for holding this important Forum and welcomed all participants from China and overseas. He mentioned that Energy Efficiency is listed as a key priority in the United Nations Development Assistance Framework (UNDAF) for China for the period 2006-2010, developed jointly by the United Nations Country Team in China and the Chinese Government. He highly appreciated various actions which have either been taken, or are being taken both by the UN system in China and by the Chinese Government to implement the UNDAF, including measures required to achieve Energy Efficiency. Furthermore, the commitment by the Chinese Government is, inter alia, evident from the recent establishment of a high-level energy-saving team, led by the Prime Minister (Mr. Wen Jiabao) with the Vice-Premier (Mr. Zeng Peiyan) as the Deputy Director of the team, with the aim of achieving the target of cutting energy consumption per unit of gross domestic product by 20% and pollution emissions by 10% by 2010 from the 2005 level.

Concerning the TVE project, Mr. Ajmal said "What is important though, is the national momentum that is being achieved. It is not unreasonable to claim that the project and its activities have advanced the implementation of relevant energy efficiency measures by some 5 years. Its international impact is also not negligible if one considers the number of independent replications it has apparently influenced in Bangladesh, Guinea, India, Pakistan, the United States of America and Vietnam." Mr. Ajmal on behalf of UNIDO, thanked the Government of China, particularly the Ministry of Agriculture (MOA), UNDP and the GEF as well as contractors, industrial and governmental organizations, including the PMO, PIC and LPICs, who have helped to make this project a success story.

3.2 Forum themes and presentations

Four thematic themes are as followings:

A. Briefing on project status, best practice and lesson- learned.

- Mr. Wang Xiwu, the senior officer of PIC, on behalf of PMO made the introduction of TVE project covered Project background and objective, Project Progress and Achievements and Implementing practice and lessons learned.
- Mr. Wang Zhimin, on behalf of Tianjin LPIC, introduced the energy efficiency works of Jinnan district of Tianjin City. He mentioned the TVE project helped them to

establish regional policy framework and its action plan which covered not only foundry but also extended to other industry sectors.

- Mr. Frank Pool, final evaluation expert of UNDP presented his evaluation report of TVE project. He showed his main find out and made a objective appraisal of TVE project. He said that "The overarching TVE evaluation finding is that the project has been very successfully implemented."

B. Introduction regarding energy efficiency and GHG emission reduction in the neighboring countries/regions, in particular progress regarding GEF supported projects

- Energy Conservation Demonstration Projects in SME Sectors in V Vietnam, by Ms. Pham Thi Nga, National Senior Technical Advisor, Project: "Viet Nam: Promoting *Energy Conservation in Small and Medium Scale Enterprises" (PECSME)*

- Commercialization of Super-Insulated Buildings in Mongolia, by Mr. Nyam Tsend, Commercialization of Super-Inssulated Buildings in Mongolia Project

- Energy Efficiency in Brick Kilns: A Barrier Removal Proejct, by Mr. IFTIKHAR HUSSAIN, UNDP Consultant

- Energy Efficiency Promotion in SMEs, by Mr. Buranasak Madmaiy, Department of Industrial Promotion Ministry of Industry

- Application Barriers for Energy Efficiency in SMEs of Philippines and GHG Emissions Evaluation, by: Mr. Wilfredo A. Balais, Officer of Industrial Technology Development Institute of MOST

- NATIONAL ENERGY POLICY IN INDONESIA: Strategy and Programs for the Future, by: Ira Palupi, Project officer, UNIDO Jakarta-Indonesia

C. Strategies and policies of international agencies/organizations to promote energy efficiency in SMEs

- Climate Change & Sustainable Energy, by Mr. John Hanawa, Programme Manager, *Energy& Environment Team, UNDP China*

D. Macro Strategy and Policy of China's government for energy efficiency in Chinese SMEs

- SME Energy Conservation and Energy Audit, by Pref. Meng Zhaoli, Tsinghua University.

- Sustainable TVE Development and New Socialist Countryside, by Mr. Ye Zhenqin, director of TVE Development Center, MOA / Secretary General of TVE Association

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3.3 Forum Materials

The forum proceeding is compiled covered 16 papers/presentations delivered by speakers at the forum. See Annex 4.

3.4 Media Materials

Totally 18 participants from 14 medias reported this forum/tour including:

- International medias like Bloomberg, Reuters, South China Morning Post, Swedish Television
- Domestic media like China Daily, Xinhua News Agency, Xinhua News Agency, South Weekly, Oriental Outlook Magazine, Caijing Magazine, CCTV-1, CCTV-10, Farmers Daily, China Radio International, People Daily, Information Center of MOA

3.5 Study Tour

Combing with the Forum, a 5 days study tour was held. Tour participants visited:

- Zhejiang Shenhe Cement Company (waste heat power generation project), a pilot TVE in cement sub-sector
- Shanxi Gaoping Xinggao Coking Group (waste heat power generation project), a pilot TVE in coking sub-sector
- Xi'an Liucun Brick Plant (a pilot project); and
- Xianyang Zhouling Hollow Brick Plant in Xianyang, Shaanxi province

Media participants interviewed not only pilot projects but also LPICs and technical support institutes. Detailed program of the study tour see annex 2. Media materials collected till June 8 see Annex 5.

4.0 Lessons Learned

A. Thanks for PMO/MOA, UNDP and UNIDO for their strong support

Actually, it is really a big challenge for Hongyuan to organize such a large and comprehensive international activity even Hongyuan is quite familiar with TVE project. Thanks for UNDP, UNIDO and MOA/PMO who provided strong support coordinate between project partners and invite participants from neighboring countries and Medias. Our particular thanks go out to the Ms. Wang Guiling, Mr. John Hanawa, Mr. Ma Jian and Ms. Zhang Wei, who have helped to make this Forum/Tour a success story.

B. The Forum/Tour is a platform for not only exchange but also for propaganda

The Forum/Tour is not only a platform for disseminating and exchanging experiences between China and neighboring countries on energy saving and GHG emissions

reductions, participation of so much Medias also realized a wider range of dissemination. It also provides Hongyuan an opportunity to work with those Medias and leaned from them how to make use of media tools.

5.0 Following Activities

A. Provide Forum/Tour information on website

Early in the preparation period, Hongyuan had established a website for publishing Forum/Tour information at www.jnjp.com/EEForum. When the Forum/Tour is finished, all the program, photos, media links and presentations were published on the website for free download.

B. Establish a SME/TVE Energy Saving discussion group

In order to made the Forum/Tour a sustainable activity, Hongyuan also established a discussion group at http://groups.google.com/group/sme-energy-effieicncy-forum for further information exchange between participants.

6.0 Conclusion

The Forum/Tour has gained in general the projected objectives. All participants were highly impressed by the project outcomes as well as the whole forum organization, meaning the content of the selected speeches, the provided documentation as well as the overall organization. Especially the combination of the forum with following media tour gave our international and domestic participants an outstanding opportunity to see and feel the success of the project activities on-site. The project owners provided always a highly respected project overview. All participants of our neighboring countries even asked for more detailed information to multiply the project outcomes in their own countries. Beside the forum and the media tour enough time to exchange experiences and building up a strong network for further cooperation was given. Already during the media tour first promising project discussions have taken place, therefore the forum provided an excellent platform.

MOA Ministry of Agriculture P. R. China

GEF Global Environment Facility

UNDP China United Nations Development Programme China

UNIDO United Nations Industrial Development Organization

INTERNATIONAL FORUM ON ENERGY EFFICIENCY AND GHG EMISSIONS REDUCTION IN SMES (TVES) & CYCLICAL AGRICULTURE

AGENDA

16 MAY 2007

SESSION 1: OPENING CEREMONEY,

VENUE: MULTI-FUNCTION HALL

Chairperson: Mr. Bai Jinming, Director of Department Science and Technology & Education, Ministry of Agriculture

09:00 – 09:10	Introduction of Participants
09:10 – 09:25	Opening Speech *by Mr. Mao Linsheng, Vice Governor of Zhejiang Province*
09:25 – 09:55	Keynote Speech *by Mr. Wei Chaoan, Vice Minister of MOA*
09:55 – 10:15	Opening Speech *by Mr. Khalid Malik, UNDP Resident Representative and UN Resident Coordinator in China*
10:15 – 10:30	Opening Speech *by Mr. Sajjad Ajmal, Representative and Head of UNIDO Regional Office for China, Mongolia, D.P.R. Korea and R.O. Korea*
10:30 – 10:45	Coffee Break

SESSION 2: KEYNOTE PRESENTATIONS

VENUE: MULTI-FUNCTION HALL

Chairperson: Mr. Ye Zhenqin, director of TVE Development Center, MOA / Secretary General of TVE Association

10:45 – 11:15	Climate Change & Sustainable Energy *by Mr. John Hanawa, Programme Manager, Energy& Environment Team, UNDP China*
11:15 – 12:00	TVE Project Brief By Mr. Wang Xiwu, Senior Administrator of PIC

SESSION3: CYCLICAL AGRICULTURE AND BUILDING UP A NEW SOCIALIST COUNTRYSIDE

VENUE: MULTI-FUNCTION HALL

Co-Chair:

Mr. Gao Shangbin, Division Chief, Department of Science, Technology and Education/TVE Project Coordinator

Mr. Wang Qingli, Devision Chief, Department of Department of Science, Technology and Education

13:30 – 15:00	Energy Situation in China and Strategies Mr. Dai Yuande, Energy Research Institute of NDRC
15:00 – 15:40	Clean Countryside Programme and Circular Agriculture Mr. Dong Wenzhong, Agricultural Environment protection Station of Hubei
15:40 – 15:50	Q&A/Discussion
15:50 – 16:10	Coffee Break
16:10 – 16:40	A new style coking enterprise – Xinggao Coking Group
16:40 – 17:05	Best practice of rural energy development in building up new socialist countryside in Zhejiang Cai Jinguo, Senior Engineer, Rural Energy Office of Zhejiang Province
17:05 – 17:15	Q&A/discussion
17:15 – 17:45	Exploration and Utilizaation of China's Rural Resources
17:45 – 18:00	Q&A/Discussion

SESSION 4: TVES/SMTS ENERGY CONSERVATION AND GHG EMISSION REDUCTION

VENUE: YUE HUA HALL

Co-chair: Ms. Caili, Division Chief, TVE Bureau

Mr. John Hanawa, Programme Manager, Energy& Environment Team, UNDP China

13:30 – 13:55	Energy Conservation Demonstration Projects in SME Sectors in V Vietnam *By Ms. Pham Thi Nga, National Senior Technical Advisor* *Project: "Viet Nam: Promoting Energy Conservation in Small and Medium Scale Enterprises" (PECSME)*
13:55 – 14:20	SME Energy Conservation and Energy Audit By Pref. Meng Zhaoli, Tsinghua University.
14:20 – 14:45	Commercialization of Super-Insulated Buildings in Mongolia by Mr. Nyam Tsend, Commercialization of Super-Inssulated Buildings in Mongolia Project
14:45 – 15:10	Energy Efficiency in Brick Kilns: A Barrier Removal Proejct

	By Mr. IFTIKHAR HUSSAIN, UNDP Consultant
15:10 – 15:35	Energy Efficiency Promotion in SMEs By Mr. Buranasak Madmaiy, Department of Industrial Promotion Ministry of Industry
15:35 – 15:50	Tea Break
15:50 – 16:15	Final Evaluation of Energy Conservation and GHG Emissions Reduction in Chinese TVEs by Mr. Frank Pool, Senior Energy Efficiency Expert
16:15 – 16:40	Sustainable Development and Energy Conservation in SMEs of Jinnan District by Mr. Wang Zhimin, Vice Director of Industry Economic Committee of Jinnan, Tianjin
16:40 – 17:05	Application Barriers for Energy Efficiency in SMEs of Philippines and GHG Emissions Evaluation By: Mr. Wilfredo A. Balais, Officer of Industrial Technology Development Institute of MOST
17:05 -17:30	NATIONAL ENERGY POLICY IN INDONESIA: Strategy and Programs for the Future By: Ira Palupi, Project officer, UNIDO Jakarta-Indonesia
17:30 – 18:00	Sustainable TVE Development and New Socialist Countryside Mr. Ye Zhenqin, director of TVE Development Center, MOA / Secretary General of TVE Association

MOA Ministry of Agriculture P. R. China

GEF Global Environment Facility

UNDP China United Nations Development Programme China

UNIDO United Nations Industrial Development Organization

STUDY TOUR OF ENERGY CONSERVATION AND GHG EMISSIONS REDUCTION IN CHINESE TVES

TOUR PROGRAM

18 MAY

- 10:00 Check out New Century Zhijiang Resort
- 10:00 – 11:00 from New Century Zhijiang Resort to Hangzhou airport, by bus
- 11:00 – 12:30 Check in and lunch
- 12:30 – 14:25 Hangzhou to Zhengzhou by CZ3844
- 14:25 – 18:00 Zhengzhou airport to Jincheng Jinnian Hotel, by bus
- 18:00 – 20:00 Dinner

19 MAY

- Media Participants
  - 06:00 – 07:00 Breakfast / Jincheng to Gaoping Xinggao Coke Company by bus
  - 07:00 – 08:30 Media briefing
  - 08:30 – 09:30 Visit coke production and waste heat power generation project
  - 09:30 – 11:30 Free interviews
- International Participants
  - 07:00 – 09:00 Breakfast
  - 09:00 – 10:00 Gaoping to Taiyuan by bus
  - 10:00 – 10:30 Briefing Meeting
  - 10:30 – 11:30 Visit coke production and waste heat power generation project
- 11:30 – 13:00 Lunch
- 13:00 – 17:00 Xinggao to Taiyuan airport by bus
- 17:00 – 19:00 Check in and dinner
- 19:00 – 21:00 Taiyuan to Xi'an by flight, HU7886
- 21:00 – 22:30 Xi'an airport to Garden Hotel by bus

20 MAY

- 07:00 – 08:00 Breakfast
- 08:00 – 09:00 Garden Hotel to Liucun Hollow Brick Plant by bus
- 09:00 – 10:30 Visit Xi'an Liucun Hollow Brick Plant
- 10:30 – 12:00 Liucun Hollow Brick Plant to Xianyang Zhouling Hollow Brick Plant by bus
- 12:00 – 13:30 Lunch
- 13:30 – 15:00 Visit Xianyang Zhouling Hollow Brick Plant
- 15:00 – 16:00 Xianyang Zhouling Hollow Brick Plant to Garden Hotel by bus
- 16:00 – 18:00 Question & Answer at Xi'an Garden Hotel
- 18:00 – 20:00 Dinner

21 MAY

- 07:00 – 08:00 Breakfast and check out Garden Hotel
- Media Participants
  - 08:00 – 12:00 Free interviews
- International Participants
  - 08:00 – 12:00 Visit Terra-cotta Warriors and Horses Museum

PARTICIPANT LIST

SN	Name	Organizations	Title
1	Wei Chao'an	MOA	Vice Minister
2	Mao Linsheng	Zhengjiang Local Government	Vice Governor
3	Khalid Malik	UNDP	Coordinator
4	Sajjad Ajmal	UNIDO	Representative of UNIDO in China
5	*Bai Jinming*	*Sience & Technology and Education Department of MOA*	*Director*
6	Wang Xiwu	PIC of TVE Project	Senior Officer
7	Ye Zhenqin	TVE Association in China	General Scretary
8	Xia Xueyu	TVE Development Center of MOA	Vice Director
9	Cui Ming	CAAE	Vice Director
10	Dai Yande	Energy Research Institute of MOA	Vice Director
11	Gao Shangbin	Sience & Technology and Education Department of MOA	Chief
12	Kou Jianping	Sience & Technology and Education Department of MOA	Chief
13	Wang Qingli	Sience & Technology and Education Department of MOA	Chief
14	Xu Hao	Loan Department of Agricultral Bank	Chief
15	Fang fang	Sience & Technology and Education Department of MOA	Vice Chief
16	Wang ping	Policy System Sector of Sience & Technology and Education Department of MOA	Vice Chief
17	Chen Jinqiang	Finance Department of MOA	Researcher
18	Cai Li	TVE Bureau of MOA	Researcher
19	Wang Guiling	"Energy Conservation and GHG Emissions Reduction in TVEs in China "Project Office	Vice Director
20	Liu Rongzhi	Acadamy Department of China Agricultral Association	Vice Director
21	Meng Zhaoli	Tsinghua University	Professor
22	Zhang Yuhua	CEEP	Vice Director
23	Zhao Lijun	International Sector of International Department of MOA	Vice Director
24	Chen Lan	Secretary Sector of GEF China	Project Official
25	Zhang Zhe	Loan Department of Agricultral Bank	
26	Zhang Zhihong	GEF	Project Manager
27	Ma Jian	UNIDO China	National Project Coordinator
28	John Hanawa	UNDP China	Project Officer
29	Zhang Wei	UNDP China	Media Officer
30	*Sanjaya Man Shrestha*	*Industrial development officer, UNIDO – India*	*Project Officer*

PARTICIPANT LIST

SN	Name	Organizations	Title
31	Pham Thi Nga	National senior technical advisor, PECSME Project - Most, Vietnam	Senior Technical Consultant
32	Junichi Mori	Junior professional officer, UNIDO Vietnam Office	Project Officer
33	Frank Pool	Energy Evaluation Expert	Energy Effcient Evaluation Expert
34	Ira Palupi	Project officer, UNIDO Jakarta-Indonesia	Project Officer
35	Wilfredo Asuncion Balais	Project officer, industrial technology development institute of the Philippines, Inc.	Project Officer
36	Iftikhar Hussain	Consultant, UNDP – Bangladesh	Consultant
37	Erich Otto Gomm	Energy programme coordinator, GTZ, Bangladesh	Project Coodinator
38	Christina L. Arokiasamy-Gomm	Officer of GTZ, Bangladesh	Project Officer
39	Siddique Zobair	Deputy secretary, Ministry of power, energy and mineral resources of Bangladesh	Vice Secretary General
40	Md.Mustafizur Rahman	Office of the Electrical Adviser and Chief Electric Inspector	Consultant
41	Md.Khalequzzaman	Senior Energy Advisor, German Technical Cooperation, Bangladesh	Senior Energy Consultant
42	Muslim Ahamed	General Manager of Bangladesh Oil Gas and Mineral Corporation (Petrobangla)	General Ma nager
43	Nguyen Khac Tiep	Industrial development officer, UNIDO -Regional Office in Bangkok	Officer
44	Sirinthorn Vongsoasup	Department of Alternative Energy Development and Efficiency Officer	Officer
45	Buranasak Madmaiy	Officer of Department of Industrial Promotion Ministry of Industry	Officer
46	Gombo Myagmar	Construction and Urban Development Department in Inner Mongolia	Officer
47	Myam Tsend	Construction and Urban Development Department in Inner Mongolia	Officer
48	Wei Chengshan	Agricultral Department of Zhejiang Province	Director
49	Cheng Huamin	Governmental Office of Zhejiang Province	Secretary
50	Xu Jianhua	Science and Education Sector of Zhejiang Agricultral Sector	Chief
51	Shen Xinglong	Technology and Education Sector of Zhejiang TVE Bureau	Chief
52	Wang Jianwei	Agricultural Energy Office of Zhejiang Province	Director
53	Tao Guanjun	Science and Education Sector of Zhejiang Agricultral Sector	Vice Chief
54	Wang Zhongmiao	Agricultural Energy Office of Zhejiang Province	Unit Director
55	Cai Jinguo	Agricultural Energy Office of Zhejiang Province	Senior Egineer
56	Wei Songgen	Zhejiang Shenhe Cement Co	Board chairman
57	Sehn Fuqiang	Zhejiang Shenhe Cement Co	Vice General Manager
58	Wang Yu	Energy and Ecology Sector of Beijing Agricutral Bureau	Vice Chief
59	Zhang Guoguang	Agricultral Evironmental Monitoring Station	Director
60	Wang Zhimin	Industrial Economics Conmission of Jinnan district in Tianjin	Director

PARTICIPANT LIST

SN	Name	Organizations	Title
61	Fang Jiquan	Dazhan Walve Plant in Tainjin	Manager of Production
62	Guo Fengling	Tianjin Kaiyuan Third Walve Co.	Technical Director
63	Wu Hongbin	Environmental Protection Station of Hebei Agricultral Department	Director
64	Ren Jixing	Environmental Protection Station of Shanxi Agricultral Department	Director
65	Ma Jun	Environmental Protection Station of Shanxi Agricultral Department	
66	Zhang Zhongdong	Environmental Protection Station of Shanxi Agricultral Department	
67	Kong Xiaoming	SME Bureau of Linfen City in Shanxi Province	Vice Director
68	Fan Zhong	TVE in Shanxi Province	Chief
69	Wang Weidong	SME Bureau of Jinzhong City in Shanxi Province	
70	Gao Zhicheng	Shanxi Xinggao Coke Group Co.	Board chairman
71	Hou Kang	Shanxi Xinggao Coke Group Co.	Vice General Manager
72	Zhang Jiping	Pingyao Yongjian Foundry Co.in Shanxi	Office Director
73	Huang Yi	Environmental Protection Station of Liaoning Agricultral Department	Vice Director
74	Zhang Shaoxian	Wall Materials Reform Office of Liaoning Province	Vice Director
75	Zhao Wei	Energy in Rural Areas of Agricutral Department of Liaoning Province	Researcher
76	Gao Fengwu	Qing Shuitai Gaotang Hollow Brickin Shenyang, Liaoning Province	Director
77	Han Yongquan	Dong she Shanzi Hollow Brick of Xinmin, Liaoning Province	Director
78	Jiang Fumin	Agricultral Enviromental Protection and Energy Management Station of Jilin Province	Vice Director
79	Han Shouxin	Agricultral Enviromental Protection and Energy Management Station of Jilin Province	Chief
80	Nan Zhehuan	Agricultral Bureau of Longjing,Jilin Povince	Director
81	Wang Huiyu	Agricultral Bureau of Huinan County,Jilin Province	Director
82	Du Chuande	Agricultral Enviromental Protection Station of Heilongjiang Province	Director
83	Li Zhanjun	Agricultral Enviromental Protection Station of Heilongjiang Province	Vice Director
84	Jin Cheng	Agricultral Energy Office of Heilongjiang Province	Vice Director
85	Fei Demin	Agricultral Technology Replication Center of Bayan County, Heilongjiang Province	Director
86	Wang Bo'an	TVE Bureau of Nanjing	Vice Director
87	Guan Yongxiang	Agricultral Enviromental Mornitoring and Protection Station in Jiangsu Province	Vice Director/Researcher
88	Li Longbao	Jiangning TVE Bureau of Nanjing, Jiangsu Province	Director
89	Liang Xinbao	Moling Foundry of Nanjing, Jiangsu Province	Director
90	Tang Wei	Lishui Zhongshan Foundry of Nanjing,Jiangsu Province	Manager

PARTICIPANT LIST

SN	Name	Organizations	Title
91	Yao Xilai	Agricultral Environmental Protection Station of Shandong Provin ce	Vice Director of center
92	Zhang Rilin	Ecological Agriculture Sector of Shandong Agricultral Department	Chief
93	Fang Rensheng	Energy Office of Rural Areas of Jiangxi Agricultral Department	Director
94	Ye Desheng	Enviromental Mornitoring Station of Rural Areas of Jiangxi Agricultral Department	Vice Director
95	Tu Xiangming	Enviromental Mornitoring Station of Rural Areas of Jiangxi Agricultral Department	Agricultral Technician
96	Ni Shenjun	Energy and Enviromental Protection Station in Rural Areas of Henan Province	Director
97	Xu Xia	Energy and Enviromental Protection Station in Rural Areas of Henan Province	Vice Chief
98	Liu Heqing	Energy and Enviromental Protection Office of Tongbai County in Henan Province	Director
99	Li Feng	Ecological Environmental Protection Station of Agriculture in Hubei Province	
100	Fan Xiuyuan	Ecological Environmental Protection Station of Agriculture in Hubei Province	
101	He Manting	Agricultral Resources and Environmental Protection Management Station in Hunan Province	Vice Director
102	Xie Kejun	Agricultral Resources and Environmental Protection Management Station in Hunan Province	Chief
103	Li Li	Cement Association of Guangdong Province	Secretary General
104	Liu Guansheng	Yingde Baojiang Cement Co. of Guandong Province	Board Chaiman
105	Yang Tianjin	environmetal Protection Station of Guangxi Agricultral Department	Director
106	Li Kedi	environmetal Protection Station of Guangxi Agricultral Department	Vice Director
107	Wang Qirong	Energy Office in Rural Areas of Guangxi Province	Vice Director
108	Liang Xingsheng	Agricultral Bureau of Zhaoping County in Guangxi Province	Vice Director
109	Yan Jian	Hainan Agricultral Department	Vice Director
110	Gao Caijun	Environmental Protection and Energy station in Rural Areas in Hainan Province	Senior agricultral Technician
111	Wu Manfeng	Agricultral Technique Center of Shanzhou.Hainan Province	Director/Senior Agricultral Technician
112	Qu Feng	Energy Office of Rural Areas of Sichuan Province	Director
113	Zhuo Nanhua	Agricultral Environmental Protection and Mornitoring Station of Sichuan Province	Vice Director/Senior Agricultral Technician
114	Song Wenqi	Agricultral Environmental Protection and Mornitoring Station of Sichuan Province	Senior Agricultral Technician
115	Chen Xiaoping	SME Bureau of shuanliu County,Chengdu,Sichuan Province	Director
116	Yang Jingui	SME Bureau of Xinjin County, Sichuan Province	Vice Director
117	Gong Muquan	Yongxing Shale Brick Co. of Sichuan Province	Borad Chairman
118	Liu Guoquan	Honglin Shale Brick Co.of Sichuan Province	Director
119	Qin Jinhua	Huayang Honghuo Shale Brick Co.of Shuangliu County, Sichuan Province	Director
120	Zhou Shuihe	Chengdu Shale Hollow Brick Co. of Sichuan Province	Director

PARTICIPANT LIST

SN	Name	Organizations	Title
121	Tao Zusheng	Agricultral Environmental Protection and Mornitoring Station of Yunan Province	Director
122	Wang Honghua	Agricultral Environmental Protection and Mornitoring Station of Yunan Province	Chief
123	Yan Wu	Agricultral Bureau of Jinghong, Yunnan Province	Vice Director
124	Guo Shunyin	Agricultral Environmental Protection and Mornitoring Station in Jinghong, Yunnan Province	Director
125	Xiao Hui	Xi'an Wall Materials Research and Design Institute	Director
126	Zhou Xuan	Wall Materials Quality Mornitoring and Testring Center of National Construction Industry	Vice Director
127	Wang Yuman	Economics and Trade Bureau of Baqiao,Xi'an City	Director
128	Ma Jiangang	)Brick Production Reform Office of Xianyang City	Vice Director
129	Ling Fuhe	Liucun Hollow Brick in Baqiao, Xi'an	Director
130	Si Lingke	Xainyang Zhouling New Building Materials Co. of Shaanxi	Borad Chairman
131	Ji Gang	Weihe Jigang Building Materials Plant of Gaoling County,Xi'an City	General Manager
132	Hui Caijing	Weihe Jigang Building Materials Plant of Gaoling County,Xi'an City	Sale Manager
133	Sun Zhengfeng	Agricultral Environmental Protection Station of Ningxia Province	Research Institute
134	Li Qiang	Agricultral Bureau of Yanchi County, Ningxia Province	Director
135	Jin Shan	Agricultral Environmental Mornitoring station of Xinjiang	Vice Director
136	Li Bin	Economics Development of Jinzhou, Dalian City	Vice Director
137	Han Jigang	Jinzhou Economy and Trade Committee	Chief
138	Yu Deyan	Jinmei Foundry Co. of Dalian city	Board Chairman
139	Hou Shanbin	Jinze Presion Foundry Co.of Dalian City	Board Chairman
140	Dune Lawrence	Bloomberg	Reporter
141	Lucy Hornby	Reuters	Reporter
142	Chen Binglin	South China Morning Post	Reporter
143	Fredrik Onnevall	SVT	Reporter
144	Goran Malmqvist	SVT	Camera
145	Wu Chong	Chian Daily	Reporter
146	Qiu Lin	Xinhua News Agency	Reporter
147	Deng Jian	Xinhua News Agency	Camera
148	Cao Haidong	South Weekly	Reporter
149	Dai Wenming	Oriental Outlook Magazine	Reporter
150	Ren Bo	Caijing Magazine	Reporter

PARTICIPANT LIST

SN	Name	Organizations	Title
151	Xaign Hui	CCTV1	Reporter
152	Zhao Yingchen	CCTV1	Camera
153	Shi Xiaojing	Farmers Daily	Reporter
154	Yao Runfeng	Xinhua News Agency	Reporter
155	Liang Baonong	Information Center	Reporter
156	Ma Hong	CCTV10	Reporter
157	Li Jiangying	TVE Development Center of MOA	Director
158	Li Xiaobing	China TVE Association	Director
159	WangHhai	Beijing Hongyuan Co.	Gneral Manager
160	Song Dongfeng	PMO	Contractor Officer
161	Gao Shuang	PMO	Project Assistant
162	Liu Yu	TVE Development Center of MOA	Assistant
163	Yang Zhixian	China TVE Association	
164	Liu Yanghui	China TVE Association	
165	Li Ting	Beijing Hongyuan Co.	Assistant
166	Jia Yuanyuan	Beijing Hongyuan Co.	Assistant
167	Lin Huifang	Policy System Sector of Sience & Technology and Education Department of MOA	Intepretor
168	Zhang Wei	Policy System Sector of Sience & Technology and Education Department of MOA	Intepretor

MEDIA CLIPPINGS

REGIONAL FORUM ON ENERGY EFFICIENCY IN SMES AND MEDIA TOUR OF ENERGY CONSERVATION AND GHG EMISSIONS REDUCTION IN CHINESE TVES

16-21 MAY 2007

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3	Reluctance to go green stifles rural ventures	South China Morning Post	Feature
4		Bloomberg	Feature
5		Swedish TV	Feature
6	NZ consultation reports local industry in China can cut emissions	New Zealand Press Association	

National Coverage			
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5	中国 100 个乡镇企业每年减排二氧化碳 110 多万吨 Carbon emissions reduced of 100 Chinese township and village enterprises exceed 1.10 million tons	新华社 Xinhua News Agency	Feature
6	Carbon emissions reduced	China Daily	
7	UN Project Promotes Green Rural Enterprises	中国国际广播电台 China Radio International	
8	中国政府与联合国共同为乡镇企业降低能耗减少排放做出努力 Chinese government and UN are in joint efforts to save energy and cut emissions for township and village enterprises	中国国际广播电台 China Radio International	
9	农业部提出三大举措推进农村节能减排 Ministry of Agriculture raises three methods to save energy and cut emissions in rural China	中国农业信息网 www.agri.gov.cn	

10	联合国力推中国乡镇企业节能减排新模式 **UN promotes new patterns of saving energy and cutting emissions for TVEs**	中国证券报 **www.cs.com.cn**	
11	联合国帮助中国乡镇企业节能减排 **UN helps Chinese TVEs to save energy and cut emissions**	联合国电台 **UN Radio**	
12	农业部三项措施推进节能减排 **Three methods of Ministry of Agriculture to saving energy and cutting emissions**	农民日报 **www.farmer.com.cn**	

Shanxi coke plants start to clean up their act
Source: Reuters
Updated: 28 May 2007

GAOPING, Shanxi Province, China, May 28 (Reuters) - The Xinggao coking plant barely looks like it's operating, and that's the point.

While most coking plants in Shanxi Province are shrouded in smoke and covered with a thick black dust, no smoke escapes from the Xinggao Coke and Chemical Group Co.'s warm ovens. Workers'
faces are clean, not masked with soot.

Xinggao is a pilot project demonstrating that even in polluted Shanxi, where coal is cheap and plentiful, China can be more efficient in using energy and cutting emissions. Supported by the United Nations Development Programme, the plant uses anthracite dust and generates power from the heat of its ovens.

"Everyone thinks the coal industry is a polluting industry.
Now every three days a delegation comes to learn from our experience," said vice president Hou Kang.

When Chinese think of pollution, they think of Shanxi. The province produces one quarter of China's coal, and half of its coke, which provides carbon for steelmaking. Its exports account for half of the world's coke trade.

In Shanxi, enormous power plants dot the landscape, lumps of coal line the highways, and every breeze wafts plumes of coal dust from piles of cinders the size of small hills. The sky is dingy, and lung disease widespread.

China's goal is to cut its carbon intensity, or the emissions of heat-trapping carbon dioxide (CO_2) per unit of national wealth, by 40 percent by 2020, while raising energy efficiency.

In Shanxi, coke plants are starting to install power plants to trap heat and gases, to get more out of each tonne of coal.

The waste heat from its production of 400,000 tonnes of coke a year heats steam for Xinggao's 15-megawatt power generator, adding to revenues and reducing the need to burn the equivalent of 46,000 tonnes of coal.

Anthracite - a hard coal not usually used for coke - contains fewer polluting impurities. Negative pressure traps gas in the ovens, cutting carbon dioxide emissions by 150,000 tonnes a year, and oven gas by 30,000 tonnes.

Xinggao has applied for clean development mechanism certification, and has agreed to sell carbon credits to a German firm once it is approved. But it initially had trouble getting loans from banks suspicious of whether the project would work.

ENFORCEMENT

As China catches up to the U.S. as the world's top emitter of greenhouse gas, Beijing has become increasingly worried about the damage to air and water from heavily-polluting industries.

Coking plants burn off impurities from metallurgical coal, in the process releasing as many as 10,000 compounds - some of them carcinogens - into the air.

Planners have adjusted credit and tax incentives to try and limit capacity to what China will consume, and ordered stricter enforcement of environmental regulations. On Monday, China raised the export tax on coke to 15 percent from 5 percent, to cut off coking plants' access to overseas markets.

But central planners can't enforce closures of polluting plants with close ties to local governments. Citizens or local press that campaign against polluters risk harassment, arrest or censure, with almost no legal protection.

Small-scale, local enterprises account for about half of China's pollutants, according to the UNDP. In Shanxi, the polluters aren't hard to find.

An hour's drive from the Xinggao plant, the Xingwang Coal Chemistry Group.'s coke and power plant has gold lettering on its gates. Behind them, flares shoot high in the air, before being obscured by belches of sharp-smelling, greenish-yellow smoke.

The city of Changzhi charged Xingwang Coal Group 5.9 million yuan in emissions fees in the first quarter of this year, according to the city's website.

Although a Xingwang official said it was "not convenient" to be interviewed, workers were more forthcoming at another coking plant nearby that belched black smoke out of a tall chimney.

"This place will be closed sooner or later. It doesn't meet the regulations," said a soot-blackened worker.

Global praise for factory with 'scent of flowers, songs of birds'
Source: South China Morning Post
Updated: 29 May 2007

Foreign praise for the "cleanest coking factory in the world" is music to the ears of 24-year-old boiler engineer Zhang Chao .

He describes the Gaoping Xinggao Coking Chemical Co's plant in Gaoping , Shanxi province , as a place with "no smell, noise or dust but the scent of flowers and the songs of birds".

As international influence infiltrates the mainland, industry upgrades its infrastructure and living standards rise, the prospect of working on environmentally friendly projects is becoming a recruitment magnet for a younger generation of workers, entrepreneurs, officials and scientists.

The plant is also attracting the interest of advocates of energy conservation and emissions reduction from around the world.

The United Nations Development Programme (UNDP) chose the plant as a greenhouse gas emission-reduction pilot plant in 2004. It produces 400,000 tonnes of coke and generates 120 million kWh of electricity each year by using residual heat, a technology that helps it to reduce carbon dioxide emissions by 115,000 tonnes a year. The factory claims its emissions of dust and pollutants are less than a millionth of the maximum amount specified by national standards.

Human resources director Hou Gong says the plant's green credentials give the group an advantage in hiring some of the best and brightest employees. On average, at least five candidates compete for each position, and those hired are usually university or college graduates.

Mr Hou says the plant employs about 300 workers, most of whom are in their 20s or early 30s and are "hard-working, ambitious, innovative and full of vision".

"Our workers' professional knowledge, technical training and overall qualities are higher than average," he says. "It gives us an edge over our competitors."

Senior electrician Ren Yufei , 23, says that during his last year in college, he and his classmates dreaded the possibility of ending up with a coking job and tried everything they could to avoid it. The plant where he worked as an intern was a "living hell", he says.

"Dust could stain your collar within five minutes of going outside. The noise was deafening. You felt dizzy all day from the smells. There was no quality, joy or hope working there."

Mr Ren says the Xinggao plant was not the highest-paying or the biggest employer to offer him a job, but he was attracted by the prospect of working for a factory that cared about the environment.

"The older generation may sacrifice a few years of their life working in a harmful environment for a bit of extra income," Mr Ren says. "But I won't."

Frank Pool, an expert in the development of sustainable energy who was hired by the UNDP as an independent assessor, says the Xinggao plant had achieved world-class energy efficiency and environmental standards by spending almost 10 per cent of its total investment on environment-related projects.

Mr Pool says that when he first visited the site everything was so clean and quiet that he thought the plant must have stopped running. "Suddenly the stove doors opened and red-hot coke rolled out," he says. "It's a miracle."

For group president Gao Zhicheng , 41, the decision to adopt the latest technology and go green was based on a desire to not live in shame and fear - the shame of creating massive pollution and the fear of environmental authorities.

In the past two years, Gaoping has closed down hundreds of small and medium-sized industrial plants, according to local officials.

"Villagers were angry and feared the plant when it was built 11 years ago, but now I am their good friend," Mr Gao says. "Times have changed. We cannot continue our business by lowering our heads and hiding our tails any more."

He says the company will be listed on the Shenzhen stock market, and he is confident the plant will become one of the coal-rich province's biggest within a few years, all thanks to the "widely recognised environmental effort, advanced technology, competitive workforce and good quality products".

About 40km north of Gaoping, 27-year-old Li Zhi heads up a team of nine young government officials at the Changzhi Municipal Development and Reform Commission. The commission is charged with managing 120 billion yuan in investment projects. Most are related to energy efficiency and environmental protection.

The former IT technician says he quit a good job in Beijing and returned to Changzhi, his birthplace, to "contribute something to the take-off of the local economy".

Meanwhile, the city government had decided to upgrade its coal-based industries by investing heavily in new technology. Sales of coal, coke and iron accounted for more than 75 per cent of the city's gross domestic product last year.

Mr Li's job is to visit factories, determine what they need to improve and help them reach out to investors. He says his team has created more than 360 investment projects, each worth more than 10 million yuan, within two years. Half of the projects are already under

way.

Mr Li, the deputy director of the commission's department of project management, says the average age in his department is 25. He says the leadership is relying more on young people, not only because they are energetic and hard-working, but also because they have a better sense of the latest trends in development and technology.

"All of [the staff] are university graduates majoring in economics, linguistics, the environment, engineering and even forestry," he says.

"Nowadays government officials cannot simply visit a factory and ask about its scale, sales and taxes.

"The future of our industries depends on technological innovation, saving energy and environmental protection."

Monitoring projects consumes most of his time, but Mr Li and his team are also creating the largest online technology and environment investment database in Shanxi. "We are trying all the possibilities to find a sustainable economic development model suitable for a landlocked city in central China," he said.

Reluctance to go green stifles rural ventures
Source: South China Morning Post
Updated: 29 May 2007

Environmental scientist Zhang Zhihong says it is extremely difficult to find an entrepreneur in rural areas of the mainland interested in talking about the environment.

Dr Zhang is the chief scientific consultant on a six-year, US$18.5 million programme by the UN and central government to save energy and cut emissions in township and village enterprises (TVEs) in four provinces.

Official estimates suggest coking, brick-making, cement and metal-casting operations of TVEs account for a sixth of the mainland's carbon dioxide emissions and half its industrial energy consumption.

"Even though our project's ultimate goal is to improve energy efficiency and reduce greenhouse gas emissions, experience has told us it's better not to mention too much about the environment in our discussions with TVE entrepreneurs," he said. "They are not interested."

In most cases, the UN experts instead lay the promise of immediate economic return on the table.

Dr Zhang, programme manager for the Global Environment Facility, explained that when residual-heat-generation technology was proposed to a coking plant owner in Shanxi province , the businessman said it was unnecessary because the existing technology was profitable enough, then doubled his production. Two years later, the coke price plunged and the plant owner regretted turning down the offer, which may have saved significant costs.

"The lack of vision is common ? they don't see the need to prepare for bad business times or the risk of tighter environmental restrictions," said Dr Zhang.

Frank Pool, an independent sustainable-energy consultant, said the reluctance of rural entrepreneurs to accept new ideas was to be expected. "They have seen the Great Leap Forward, they have seen the Cultural Revolution, and they have survived."

He said that when the market economy began to emerge, they ended up as managers of defunct businesses that probably owed the bank money, were inefficient and were closely tied to local politics.

"Most of them failed. Those who survived became intensely practical, worried about all the costs, worried about the bottom line, worried about shipping it out the door and getting paid for it."

Vague property rights have added to the reluctance of TVEs to invest in new technology and conservation of the environment.

Ling Pengli , manager of Xian's biggest brick plant, says he could have solved some of the problems at his business with an automated production line, but hesitated to make the investment because of uncertainty over the length of the company's land lease.

"The land belongs to the village, and its allocation arrangements often change when the village leadership changes," Mr Ling said. "In the countryside, local officials' administrative power is sometimes more powerful than national laws."

The Liucun Hollow Brick Plant produces 50 million energy-efficient bricks a year, and through the UN's efforts, is doing so while using 25 per cent less energy and cutting carbon dioxide emissions by more than 3,000 tonnes.

But the plant is finding it more difficult to recruit labour because young people are shunning dirty, back-breaking work. Most of the plant's workers are aged over 40.

NZ consultation reports local industry in China can cut emissions
Source: New Zealand Press Association
Updated: 17 May 2007
http://www.nexis.com/research/search/document?_m=2d15fbe365691193c80644d5b8c04fc6&_ansset=C-WA-A-B-B-MsSAYWA-UUA-U-U-B-U-U-AAYWUEWZDC-AADEZDBVDC-YVCUUVAD-B-U&_docnum=3&_fmtstr=FULL&wchp=dGLbVzb-zSkBb&_md5=3aa17547a7a85a9bfa76dd95d716eaa0

Wellington, May 17 NZPA - An international project has helped cut 1.1 million tonnes of carbon dioxide emissions in China annually.

The project encouraged townships and villages to adopt energy efficient technologies, according to a New Zealand consultant's report.

New Zealand-based independent sustainable energy consultant Frank Pool said the project owed its success to a logical and realistic design, in which national and local governments, industry bosses and an entrustment loan facility were able to work together.

The ``green'' towns are mostly in China's cement, brick, coking and metal casting sectors, estimated to be responsible for one-sixth of China's total carbon emissions, the project's coordinators with the United Nations Development Programme (UNDP) told the China Daily.

``The project identified that there are still large untapped energy efficiency potentials in the four town and village enterprise sectors in China,'' Mr Pool wrote in the final evaluation report for the project. His report was released yesterday at an international forum on rural energy efficiency held in Hangzhou, in East China's Zhejiang Province.

The $US18.5 million ($NZ25.6 million) project started with nine pilot sites in Shaanxi, Sichuan and Zhejiang provinces, and was rolled out to another 109 nationwide, with 400 more expected to follow suit soon.

Zhejiang Shenhe Cement Co, one of the pilot sites, has reduced about 20,000 tons of CO_2 emissions per year by building the country's first waste heat power generation plant, which collects waste heat from the cement kiln to generate electricity.

China's Small Industries Struggle to be Green
Source: Xinhua News Agency

Updated: 25 May 2007
http://english.cri.cn/2946/2007/05/25/189@231460.htm

When Frank Pool first set foot in a coking factory in Shanxi Province, one of the most heavily polluted provinces in China, he asked one question -- "When is the factory going to start operating?"

He was told that the factory was indeed operating. "I couldn't believe it," Pool recalled. "There was no noise, no smoke and there were flowers around, it just couldn't be true."

Pool, a New Zealand-based independent energy consultant, who was there to evaluate an international project, remained skeptical.

His skepticism dwindled as he went closer to the production line in the Xinggao Coking plant.

"The factory was indeed running," Pool said. "You could feel the heat of the working oven when you approach it."

The mystery of the plant's surprising cleanness for such a notorious industry lies in the clean coking oven, which works under a sub-atmospheric pressure in order to reduce leakage of gas or fumes to the air.

Meanwhile, the coking oven is connected to an ascension pipe that collects the waste heat for generating power.

The coking plant was one of the eight pilot sites of an international programs, jointly supported by the Global Environment Facility (GEF), the United Nations Development Program (UNDP), the United Nations of Industry Development Organization (UNIDO) and the Ministry of Agriculture (MOA). It aims to help small enterprises in rural China save energy and reduce carbon emissions.

The program focused on the cement, brick, coking and metal casting industries, the four major sectors of pollution and energy consumption in rural China, which are estimated to be responsible for one-sixth of China's total carbon emissions, according to the MOA.

Raising the awareness of energy conservation in entrepreneurs was the biggest challenge, said Wang Guiling, the program's manager. "It's no use talking about protecting the environment or reducing carbon emissions to the small enterprises. You have to convince them that the money they spend will reap a big payoff."

The challenges and risks for a small company are enormous, says Gao Zhicheng, president of the Xinggao Coke and Chemical Group Co., Ltd, which operates the coking plant.

"We learned from experts that the waste heat can generate power in theory," Gao said. "But the problem is, how much power can the heat generate? Will it be worth the money we invest?"

Gao decided to take the risk. The company invested 70 million yuan (about 9 million U.S. dollars), including 100,000 U.S. dollars funded by the program, to build the waste heat power generation plant, which now can generate 120 million kilowatt-hours of electricity each year, equal to the consumption of 920,000 tons of coal.

"The risk was high and now we are benefiting from it," Gao said.

Not only can the power generated by waste heat provide for the daily running of the coking plant, the additional power is sold to the public grid and can bring in 25 million yuan (3.6 million U.S. dollars) to the company a year.

However, Gao's model coking plant belies the bigger "uglier picture" of China's coking industry.

Coking plants, which produce coke, a high-carbon residue obtained from distilling coal and used in making steel, are usually dirty, smelly and smoky.

The most common scenario for a coking plant is huge cloud of black smoke spewing from chimneys into the skies, and the poignant smell of burning coal rush into the nose, said Gao Shangbin. A large number of small coking plants are still operating in that way, he added.

Coal, China's biggest energy resource, provides nearly 70 percent of the country's total power and nearly 80 percent of its electricity.

China is among the world's largest coal consuming nations. Nine out of ten of China's new power plants run on coal, and somewhere in the country, a new coal-fired power station is being built every seven to ten days.

In its 11th five-year plan, the government aims to reduce the energy consumption intensity by up to 20 percent. However, it failed to reach its goal by four percent in 2006.

The government has ordered the closure of heavy energy consuming plants; however, because these industries contribute greatly to local GDP, some local governments chasing growth have ignored the call.

Small industries tend to make fast money. Few are willing to run risks, nor have the foresight of sustainable development, said Zhihong Zhang, the program manager from GEF.

When the program started in 2001, a time when coal prices were rising, many coking plant managers did not want to "waste" their money in building a heat power generation plant to save energy, Zhang said.

Although such a plant would reduce costs in the long run, the upfront financial costs of energy conservation have outweighed the long-term benefits for many entrepreneurs.

"They would put the money into building another coking production line, using the old technology that consumes a large amount of energy and produces lots of pollution, but makes instant profits," Zhang said.
Meanwhile, for small industries, even if the entrepreneurs want to make their plants energy friendly by upgrading the technologies, getting loans from the bank is not easy.

A brick plant, for example, can be established by renting a piece of land with abundant clay and setting up a kiln, with little collateral required, said Wang Guiling.

This is where the government can play a role. For the program's pilot sites, local governments either financed or helped guarantee these enterprises in getting the loans from the Agriculture Bank of China for building energy-conservation plants, Wang said.

More than half of the Xinggao Coking plant's investment in the clean oven and waste heat generation power plant were supported by the government, Gao said.

In the days when coking coal prices are low, a large portion of the company's profits comes from the electricity sold to the public grid, said Gao.

The electricity generated by the coking plant using waste heat, is sold to the Shanxi provincial public grid for 23 fen (three U.S. cents), but it has to pay three times the money to use the electricity from the public grid.

"Sometimes we cannot help feeling that the efforts we make to save energy are not fully recognized by the government," Gao said.

Power generation is a highly monopolized sector and government is trying to persuade the power companies to charge less for the electricity generated by small industries using clean technology, said professor Meng Zhaoli, an energy expert from Tsinghua University.

"The government should subsidize those plants for connecting to the public grid," Meng said, adding that policies have failed to adapt to the country's plan for energy conservation.

Although the call has not been answered by the central government, local governments

are taking steps.

The Shenhe Cement Co., Ltd, in east China's Zhejiang province, the biggest energy consumer in Tongxiang city, where the plant is located, was renovated with a heat recovery power generation plant in 2005, which cost 20 million yuan (2.6 million U.S dollars).

With a power generation capacity of 50,000 kilowatt-hours each day, which covers one third of the cement factory's daily consumption, the cement plant, however, has to pay 11 fen (1.5 U.S. cents) for connecting to the grid.

The local government has subsidized the cement factory for connecting to the public grid, which would cost the factory more than 5,000 yuan (640 U.S. dollars) a day, according to Wei Songgen, president of the company.

The government is transforming from imposed administrative orders in the amount of reduction of annual energy consumption to taking measures that encourage enterprises to save energy, such as favorable tax policies, financial support and rewards, he said.

However, such measures have not expanded to the national level and the government has a lot to do on its side, Meng added.

乡镇企业节能遭遇政策阻力
source: 南方周末 www.southcn.com
Updated: 24 May 2007
http://www.southcn.com/finance/nfcm/nanfangzm/200705240515.htm
http://finance.sina.com.cn/g/20070524/11433625885.shtml
http://finance.jrj.com.cn/news/2007-05-24/000002266445.html

联合国开发计划署等国际组织与农业部在浙江、山西和陕西等地进行乡镇企业节能项目试验发现，推动企业节能不能单纯依靠政府的呼吁，必须让企业获得节能的收益

让中国的企业节能，这可不是件容易的事。毕竟节能常常意味着一笔不菲的投入，而企业关注的是短期收益。不过，情况已经起变化，现在连一些中国的草根企业也意识到节能并不是一个赔本的买卖。

59 岁的司令科用了 6 年时间才明白这个道理，他是陕西省咸阳市周凌空心砖厂的老板。5 月 20 日，南方周末记者跟随农业部和联合国计划开发署的工作人员来到他的砖厂，这个不起眼的乡镇企业由于使用节能型窑炉已经成为节能减排的国际模范。

司令科在几年前是个连温室气体都不知道的乡镇企业家，现在蹲在椅子上讲得头头是道，而且他还不断扳着手指数着一个连他自己都感到惊讶的数据：一年省煤一千多吨，这相当于节省了二十多万元的成本。而国际独立的咨询机构更是给出了一个令很多砖厂老板"似懂非懂"

的数据：司令科的砖厂一年可以减少二氧化碳排放2582吨。

2006年，国家发改委宣布“十一五”期间中国的经济发展将节约20%的能源，平均而言，每年将节约4%，但许多大型企业对此并不热心，这个目标第一年就没有完成。当国家发改委正在为“十一五”节能目标犯愁之时，中国的一些乡镇企业却对引进节能项目迸发前所未有的热情。

2001年初，全球环境基金中国项目首席技术顾问张志宏和农业部的官员在山西寻找合作企业时，映入他们眼帘是的中国经济快速发展的典型场景——村村点火、处处冒烟。

他们希望增强中国企业特别是乡镇企业的节能意识。在一些国际组织看来，中国环境问题恶化与中国乡镇企业低效率的能源利用密切相关。据联合国开发计划署统计，中国乡镇企业的能耗比为16%－60%，这高于当时的平均水平。

当他们和政府推荐的企业———往往是国有、集体企业谈判的时候，他们发现这些企业由于产权的约束，根本没有动力去节能。

最终他们将合作对象瞄准山西当地炼焦的民营乡镇企业。但在那些满面尘土的乡镇企业家看来，这些外国专家和政府官员，就像在谈论一个笑话———项目掏一分钱，企业就得掏四倍的钱去搞节能技改项目。要知道，2001年正是国内焦炭价格节节上涨、焦炭企业开足马力挣钱的好年头，这些老板们没有兴趣去搞节能技改。

此时，让这些暴发起家的老板接受一种收益并不可预知的项目，简直就是天方夜谭。张志宏和农业部的官员在浙江寻找合作伙伴时也遇到相似情形。2001年时，浙江全省电荒，一些企业甚至愿意上马柴油发电项目也不愿意接受张志宏他们提供的“余热发电”等节能技术。

“从企业的角度考虑，的确没错。”2007年5月21日，张志宏回忆，“这些企业并不愿意将资金投入到发电项目，更愿意投入房地产、煤矿这些一至两年就有回报的项目。”

当然，如果国际组织能够无偿向这些乡镇企业提供几十万元的资金，也许能迅速推动项目的进展。但这恰恰是中国政府以往实行的各种节能项目失败的根本原因。

5月20日，一个老实巴交的老板告诉南方周末记者，他当时想让项目组给他买一台几万元的推土机。毕竟一个推广技术的企业还可以获得1.2万美元的资助。结果，项目组的官员告诉他，给示范企业的50万元是搞节能的，不是给买设备的，这位老板倍感失望。

为了说服企业，农业部乡镇企业节能与温室气体减排项目办副主任王桂玲就这样往返于北京到浙江、山西、陕西的路途之中。

“我们不是扶贫，我们是锦上添花，是四两拨千斤。”至今，司令科记得王桂玲在会议上反复对他们这些蓬头垢面的砖瓦厂老板说。王桂玲不断地问这些老板：“今后五年想干什么？”

二十多年来，这些砖瓦厂的老板只要自己垒一个炉窑，圈一块地，就可以开始生产砖，何尝想过项目组给他们设计新型的节能窑炉。

最终，一些未来发展思路明确、能够看得清楚产业政策发展走向的企业成了项目组的合作企业。

大爆炸

“好像一个炸药库，如果没有一根火柴点燃，是不可能产生爆炸的。”5 月 20 日晚，司令科这样比喻道。

这根火柴就是说服企业去懂得一个道理———节能的确可以带来收益。山西省高平市兴高焦化有限公司董事长郜志成明白了这个道理。这位 41 岁面色白皙的老板曾开过照相馆、饭店，倒卖过吉普车，最终举全家之力投入到焦炭行业。

在项目组的帮助下，他的企业将炼焦产生的高温废气收集起来用于发电，而发电厂弃用的冷却水用于给焦炭降温，从而焦化厂和电厂可以互相利用对方的废弃物，实现了循环发展。

现在，郜志成的工厂每年可以生产 40 万吨焦炭，发 1.2 亿度电。郜告诉记者，现在他的电厂每年可以为他带来 2700 万元的收入，“如果电价涨到 3 毛钱，就有近 5000 万元的收入。”

5 月 18 日，兴高焦化有限公司的工厂中，花花草草生机盎然，即使在炼焦炉旁，也难以闻到刺鼻气味。山西省环保局的监测数据更是不可思议，二氧化硫、氮氧化物等排放浓度甚至只有国家标准的一半。

“就好像在一个偌大的房间内，点燃一支烟的影响那么小。”公司副总经理侯康给记者打了个比方。

这家焦化厂如今已成为行业内的楷模，国内有三十多家炼焦厂向它学习，连一些美国、德国的企业也来向它取经。参观学习的要求如此之多，以至于郜志成决定对商业性的参观开始收费。

干了十多年砖瓦厂老板的司令科，现在乐呵呵地坐上了咸阳市砖瓦协会会长的位子。在他看来，这些项目让他们知道了“不算不知道，一算吓一跳”。

以前，他们从没有算过自己耗电、耗煤的数目，一年只要赚到钱就可以。当他们按照国际机构的要求，测算之后吃惊不已。原来用老的窑炉，每生产一万块砖，要耗煤 1.2 吨，有时甚至达到 1.5 吨。经过改进之后，已经降到 0.98 吨，甚至更少。“这些可都是钱啊。”司令科甚至夸张地说，他们宁愿技术能改到不烧煤也能产砖。

以前，参加全国墙材会议，当地只有他一人，现在这些老板都纷纷报名参加———就是想要获得怎么降低成本的技术。此前，司令科打算投产一批垃圾做的砖，但是后来发觉这只是社会效益好，政府喜欢，“没市场就不生产，尽管环保”。

现在，他们在自己的砖上打上了生产厂家的标记，类似于商标。司令科掌管的协会下属三十多家砖厂，正打算引进一种设备，专门检测煤炭的发热量。这些以前靠目测的土老板，现在更相信技术的力量。

政策束缚

最简单的道理，最简单的市场游戏规则，在中国，往往要被染上中国特色。

在国际机构制定的一系列约束条件下，有些企业甚至觉得是一种累赘———老是有人来调研，企业机密泄露了怎么办？逐渐他们适应了这种方式，尽管他们对这些人员谈论的温室气体减排并不了解。

“企业目的是赚钱，我们是通过节能实现了减排。”王桂玲说。如此简单的一个道理，在更多企业看来却是难以理解———环保、温室气体似乎是政府的责任，乃至国际机构和农业部进行项目调研中，国际机构的专家一直强调说：“不谈环保、不谈温室气体、只谈节能能不能赚钱。”

这些苦苦在中国大地上穿行的项目官员，曾经也掌管过政府的各种支持地方的节能项目，最终往往演变成“抢报项目的滑稽场面”，而前期的科学论证、设计却始终缺乏。明白这个逻辑的不仅仅是项目官员，一位企业家如此比喻节能之难——高楼已经建成，突然发现地基不牢靠，要重新打地基，“这可能吗？”

不过，那些已经能够自发进行节能的企业在政策层面上遇到莫大的阻力。

郜志成向南方周末记者抱怨：“只感觉优势存在，但是没有转变为资本的优势。”他们利用节能技术的电厂卖给山西省电网的电价是 0.2344 元，但是从山西省电网买电却是 0.618 元，自己的低价电，反倒要高价购买。另外，按照山西省的标准，收取他们的排污费是按照最低标准 18 元收取，事实上，他们已经综合利用了污水。

更让郜志成担心的是，他们采纳的清洁型的综合利用炉型并未得到“准入条例”的许可，传统的以鉴定炉型而鉴定企业类别方法的弊端，在这里显露无遗。而这不仅仅影响到厂家的出口配额、银行贷款，更是影响到他们的上市准备。

在企业运用节能技术推动企业发展的路上，还布满了部门利益和国家政策的荆棘。

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24 May 2007

Energy-Saving Effort of Township Enterprises Faces Policy obstacles

A recent research project co-conducted by the United Nations Development Program (UNDP) and the Ministry of Agriculture (MOA) on township enterprises in Zhejiang, Shanxi, and Shaanxi Province shows that the actual rewarding benefit received by the

enterprises is more effective than bland governmental appeals in persuading them to go energy-saving.

It is difficult to persuade Chinese enterprises to produce under an energy saving mode, as it often requires a large sum of initial investment for facility construction. This inherently works against their primary concern on short-term proceeds. Nevertheless, the situation has been changing, as more nation's grass roots enterprises came to realize that energy-saving can be a profiting business.

Si Lingke, 59, the manager of Zhoulin Air Brick Factory in Xianyang, Shaanxi Province could not agree more to this conception with his own experience over the past six years. On May 20, Southern Weekly journalist together with experts from MOA and UNDP visited his factory. Because of the introduction of the energy-saving kiln, his mill has won international recognition as a production prototype for energy saving and emission control.

Back to several years ago, the entrepreneur Si Lingke had not even heard of the greenhouse gas, whereas today, he spoke with fervour and assurance on the energy-saving production. Through the conversation, he was greatly surprised by the figures provided by the experts from MOA and UNDP--saving more than 1,000 tons of coal per year, equating to a cut in production cost of 200,000 yuan or more. When independent international consulting institutions further pointed out that Si's new factory emitted 2,582 tons less carbon dioxide each year compared with his old one, Si seemed to be bewildered in understanding what the number stood for.

In 2006, the National Development and Reform Commission (NDRC) announced the Eleventh Five-Year Plan, which calls for a 20% reduction in energy per unit of GDP produced from the 2005 level. This means that during the period, an average 4% reduction in energy consumption efficiency is expected. However, little passion was expressed by large enterprises in meeting this requirement, causing the failure of the target-hitting on the very first year it was launched. As the NDRC worries about fulfilling its Eleventh Five Year Plan on energy sector, enterprises in villages and towns have shown unprecedented enthusiasm in launching energy-saving projects.

In early 2001, officials from MOA and Zhang Zhihong, Chief Technical Adviser of the Global Environment Facility China visited Shanxi Province to seek for partnering enterprises. There they came across the typical development scenarios in villages and towns in today's China: the environment was severely damaged to trade for the economic boom.

Zhang and his colleagues hope that there will be an increase in energy-saving awareness among Chinese enterprises, particularly those located in towns and villages. According to some international institutions, the low efficiency in energy consumption among these

township enterprises is the major cause for the environment degradation in China. According to the statistics from UNDP, the energy efficient ratio of township enterprises in China ranges between 16% to 60%, higher than the average standard then.

When Zhang and his colleagues negotiated with government-recommended enterprises, mostly those state-owned and collectively-owned enterprises, they found that due to the confinement of property rights, those enterprises virtually have no motivation to save energy.

In the end, they decided to cooperate with the privately-owned coke production township enterprises in Shanxi Province. However, when those foreign experts and governmental officials introduced their plan, that the enterprises shoulder 80% of the total cost to build energy-saving facilities with the rest 20% of the cost covered by the program, they were considered by those rustic entrepreneurs being telling jokes. In fact, those coke enterprises made a good fortune out of the soaring domestic coke price in 2001. No wonder those entrepreneurs had little interest in technique reform to save energy.

Understandably, it was almost impossible to persuade those parvenus to participate in a project with unassured proceeds. When Zhang Zhihong and officials from MOA looked for partners in Zhejiang Province, they encountered the same problem. Zhejiang suffered from provincial-wide power hunger in 2001. However, even under such circumstances, many enterprises chose to take on diesel power generation project instead of using the "Exhaust Heat Power Generation" technique provided by Zhang.

"This is absolutely a legitimate decision from the perspective of an enterprise," said Zhang Zhihong on May 21, 2007, "These enterprises are not willing to invest in power-generation projects. They want to invest in projects such as the real estate and coal mine industry where returns can be gained within one or two years."

Indeed, aid given gratis of several hundred thousands yuan from international institutions may speedup the development of those projects. Nevertheless, this is exactly the fundamental reason why the various energy-saving projects formerly launched by the Chinese government ended up with failure.

On May 20, a frank businessman told the journalist of the Southern Weekly that originally he wanted the project to buy him a bulldozer worth of several thousand US dollars. After all, an enterprise involved in technique popularization could receive aid of up to USD12,000. However, the officials in charge of the project told him that the 500,000 yuan fund given to the demo-enterprise is exclusively for energy saving construction, not for the equipment purchase. Knowing this, he was deeply disappointed.

Wang Guiling is the Deputy Director of the Village and Township Enterprises Energy Saving and Greenhouse Gas Emission Control Office, an institute under the supervision of the Ministry of Agriculture. She spent most of her time traveling between Beijing,

Zhejiang, Shanxi, and Shananxi, persuading the enterprises to work with their project.

"Our work is not to reduce poverty. What we are doing is to help you make your enterprises operate in a better condition through comparatively low cost." Even to this date, Si Lingke still remembers Wang Guiling repeatedly telling such to those roughly dressed tilery managers like him during their meetings. She kept asking them:"What do you expect for in the coming five years?"

For more than twenty years, so long as those tilery managers have built a kiln and bought a piece of land, they could go on for brick production. Never had they thought about the project group devising the new-style kiln for them.

Finally, those enterprises who are clear in their future development strategies and those who are able to recognize the development trend of the industrial policies became the partnering enterprises of the project.

Huge explosion

"It's just like a powder house. If you don't light a piece of match, then it won't explode." said Si Lingke in the evening of May 20.

。Enterprises should learn something from this piece of match—energy saving really brings profits. Gao Zhicheng, president of Xinggao Coke and Chemical group co.,LTD in Shanxi province understands that. He used to run a photostrudio, to own a restaurant and to sell Jeeps. Finally he put all this money into the Coke Industry.

With the help of the project team, his company managed to generate electricity from the gathering of the high-temperature waste gas while the cooling water abandoned by the power plant is used to bring down the temperature of the coke. By doing such, the Coke and Chemical plant and the power plant are able to mutually take advantage of the waste from each other so as to achieve circulating development.

At present, Gao Zhicheng's plant could produce 400 thousand tons of coke and 120 million kilowatt hour each year. Gao told the journalist that his power plant could bring him 27 million yuan each year, " if the price of electricy could be raised to 0.3 yuan per kilowatt hour, the income will be 50 million yuan." He said.

On May 18, in the plant of Xinggao Coke and Chemical group co.,LTD, we could see flowers and grass prospering. Even near the coke oven, you could hardly smell anything offensive. The monitoring data from the Environmental Protection Bureau of Shanxi province are even more unbelievable. The density of SO_2 and nitrogen oxides emissions just reaches half the national standard.

"The influence is as trivial as that you light a cigar in a large room." Said Hou Kang, vice president of Xinggao.

This coke and chemical plant has already become a model in the domestic coke industry. More than 30 domestic coke plants sent people to Xinggao to learn its experience. There are even some companies from US and Germany sending delegates to Xinggao to learn from it. There are so many requests asking for a visit that Gao Zhicheng decided to charge on some visits of commercial features.

Si Lingke used to the owner of a brick and tile factory for more than 10 years. Being very pleased, He's now the president of brick and tile association of Xianyang. From his point of view, they realized from these projects that "it could be really surprising if you calculate in details".

Previousely never did they calculate the amount of electricity and coal consumed by themselves. The sole aim is to gain profits every year. However, it surprised them when they re-calculated in accordance with the requirements of international institutes. It needs to burn 1.2 tons, sometimes 1.5 tons, of coal to produce 10 thousand bricks with the old-type coke ovens. By improving the techniques, it's reduced to 0.98 tons or even less. "What we are burning is all money." Si Lingke said in a exaggerated manner, they even prefer to improve the techniques so as to produce bricks without burning coal.

There used to be him alone participating in the national meeting of construction materials, but now there are many managers being eager to join in. They all wan to gain the techniques that could help them to cut cost. In the past Si Lingke planed to produce bricks made out of garbage, however he later noticed that this would only produce good social feedbacks which government would like, "we won't put it into production if there is no market even though it might be environmental protected."

They put on their own bricks marks of the manufacturer now. It's very similar to the trade mark. More than 30 brick factories in the Association led by Si Lingke are planning to import a set of equipment to test the heat-producing capacity of coal. These local owners who used to trust their eyes seem to have more confidence in modern techniques.

Policy obstacle

The simplest principles and market rules are often taken on some Chinese features.

Under the strict requirements set by the international institutions, some companies even considered them to be kind of burdens—there are always people coming to do research, what if the secrets are disclosed? They gradually get accustomed to it though they know little about the reduction of greenhouse gas emission.

"The purpose of companies is to make money and we managed to cut carbon dioxide

emissions by way of saving energy," said Wang Guiling. However in the meanwhile it's hard for some enterprises to understand such an easy principle—it seems to be the responsibility of the government to protect the environment and reduce the greenhouse gas. Thus during the survey conducted by the international institutions and the ministry of agriculture, experts form the international institutions kept emphasizing that " whether they could make money with only focusing on energy saving while putting aside environmental protection and reduction of greenhouse gas."

These project officials used to be in charge of all kinds of energy saving programs that turned out to result in a ridiculous circumstance where people strive to be the first to apply for a project without any prophase scientific verification and plan. Not only do the project officials know this logic, a entrepreneur makes such metaphor of the difficulty of energy saving that when you realize after the building is set up that the groundwork is not stable enough to support the building, is it possible to re-construct the groundwork?

Nevertheless, those enterprises which are able to save energy spontaneously are encountering even more resistance on the level of policy making.

Gao Zhicheng complained to the journalist of Southen Weekly that " the advantages are existing however we can not convert them into the advantages of capitals." They sell to the Shanxin Electricity Net electricity generated from the energy saving power plant at a price of 0.2344 yuan per kilowatt hour while they need to spend 0.618 purchasing their own electricity. Besides they are charged for a lowest pollutant discharge fee at 18 yuan, however they've already make comprehensive use of the waste water.

What makes Gao Zhicheng even more worried is that the clean comprehensively used oven type has not yet been granted a permission by the Entrance Regulation. The typical way to classify enterprises in terms of oven types shows its disadvantages here. Companies may be affected not only in the process of gaining export quotas and loans but also in the process when they are preparing to get listed on the stock market.

There are still obstacles of department interests and national policies on the way where enterprises use energy saving techniques to push their companies forward.

兴高：行将上市的无烟神话
Source: 瞭望东方周刊
Updated: 29 May 2007

（目录导读）"来兴高一定要穿白衬衫，脏一件赔十件"

（文章导读）山西的一家乡镇企业正在筹备把"节能减排形象"包装上市，并打算通过国际市场交易温室气体减排量

兴高焦化位于山西高平市马村镇，属于晋城地区。高平历史上最著名的一笔，发生在战国时期——令“纸上谈兵”的赵括折兵40万的“长平之战”，就发生在这里。

但除此之外，高平只是个不起眼的晋东小镇。当地民居的颜色也是多数是灰蒙蒙的，空气中偶尔还会飘来二氧化硫的味道，非常符合初次造访者对于煤乡小镇的想象。唯一让人印象深刻的，是很多民居的门额上都有寄托美好理想的四字匾额，比如“鹏程万里”、“雅舒净洁”。

（小标题）每三天就会有代表团来参观

取名意为“振兴高平”的兴高焦化集团和它的创始人郜志成，却让平凡的高平显得有些与众不同。

晋城盛产无烟煤，是全世界三大无烟煤田之一。无烟煤俗称“白煤”，而全世界的焦化产业都用纯烟煤，“白煤不能炼焦”是几百年的行业定律。但郜志成居然就在2001年用白煤炼出了符合国家冶金标准的焦炭。

也是在2001年，兴高焦化加入了中国农业部、全球环境基金（GEF）、联合国开发计划署（UNDP）和联合国工业开发组织（UNIDO）实施的“中国乡镇企业节能与温室气体减排”项目，投入巨资引进了“清洁型热回收焦炉”，把炼焦的副产品全部燃烧并用来发电。

六年前，节能和减少温室气体排放多半还只是艺术家和环保人士关注的事情，但这家山西的中型乡镇企业居然就敢把大笔资金投入进去。兴高副总经理侯康说，当时心里是很忐忑的，一是“创新风险”，就是国际专家介绍的焦炉在兴高能不能奏效，是不是确实无污染，谁也不敢打保票；二是“政策风险”，国家和省里对节能企业的扶持是不是不变，他们心里也没数。

而当时，国际市场上的焦碳价格炒到了400美元一吨，几乎所有的同行都在拼命扩大产量。

郜志成告诉《瞭望东方周刊》记者，当时很多人反对，而他之所以敢于肯定地搞“环保”，就是因为他觉得每个行业都有一个“切入点”，对于焦化企业来说，环保和节能就是这个点——“就像人一样，一个行业最终也要追求健康长寿”。

现在，国际市场上焦碳的价格早已回落，而气候变暖却成为全球性的课题。年产40万吨焦炭、发电1.2亿千瓦时的“联合国样板”乡镇企业“兴高”也具有了国际性的知名度。

侯康说，现在平均每三天就会有一个国际国内的代表团来参观，“一开始村民还会围观，现在已经习以为常了。”

印度著名的塔塔公司在计划投产焦碳厂的时候，就特别派出一个工程师团来兴高考察过。

（小标题）来兴高一定要穿白衬衫

《瞭望东方周刊》记者在在5月19日到达兴高之前，听到了两个有意思的故事。

一个来自新西兰人弗兰克·普尔——联合国开发计划署和“全球环境基金”聘请的节能减排项目独立评估专家。

两年前，大个子专家弗兰克第一次来到兴高焦化，大为惊异。厂区里没有一股烟，一丝粉尘。他立刻联想到，兴高一定是像很多中国的焦化厂一样，为了应付“外国领导”的检查暂时停产了。一直到他被带到焦碳车间，亲眼看到半小时后出炉的焦碳，他才彻底相信。

记者向弗兰克印证这个传说时，他说，一点没错。记者请他用一两个词来形容对兴高的印象，弗兰克说是“令人难以置信的干净”。记者又问，这样的洁净程度在全世界同行中处于什么水平。出乎记者意料，弗兰克回答说，就他本人来说，“在世界上从未见过”。

同行的中国农业部科技教育司综合处处长高尚宾印证说，他在美国参观过著名的太阳焦碳公司，“里面要脏得多，工人都穿着厚胶鞋，地面也是黑的”。

第二个传说来自于“全球环境基金”项目经理、“中国乡镇企业节能与温室气体减排”项目首席技术顾问张志宏博士。张志宏回忆说，他第一次来兴高的时候，郜志成告诉他，来兴高一定要穿白衬衫，脏一件赔十件。果不其然，白衬衫一尘不染。5 月 19 日这天，张志宏特意又一次穿了白衬衫，五个小时之后出来，仍然干净。

张志宏说，没有见过传统焦化厂的人很难感受到这种差别。他清楚地记得上世纪 90 年代来山西的景象：坐在火车里，沿线都是冒火冒烟的焦炭。而在高平，他说自己“第一次在山西看到了蓝天”。

记者跟随张志宏等专家来到高平的时候，天空万里无云，阳光灿烂。兴高焦化厂区出奇地安静，几乎没有行人，更看不到“满面尘灰烟火色”的工人，连地面都整洁得不像一家工厂，偶尔飘出的“烟”，也只是冷却塔上冒出的水蒸汽。贴在焦碳车间外墙的洞眼上，才能看到里面红红的炉火，感受到炙热的温度。而厂房之间的运输通道，也细心地由廊桥相连，避免粉尘飞扬。

（小标题）“有正确的赚钱观，才能赚持久的钱”

郜志成把自己的工厂称为焦化行业的“彩色革命”，他说自己是同行中第一个把烟囱刷成彩色的。尽管许多中外记者都出于职业习惯对这家“完美”的工厂存有质疑之心，但也不得不承认，这至少是一家颠覆了焦化厂传统形象、比大多数同行更深谋远虑的乡镇企业。

41 岁的“兴高”创始人郜志成在高平是个传奇人物。18 岁那年，他从山区小城只身闯北京，倒卖需要计划指标的商品。在北京的观念启蒙，令他在今后的人生中做出了很多大胆且超前的跳跃性选择。

1987 年，他与父亲一起开了一家照相馆，是高平最早的三家个体户之一，一年能赚一万元，当时算是了不得的。随后，他把自己的“晨光图片社”开到晋城，对于很难赚钱的活，比如给农民拍照，他就走村串镇上门服务。很快，他在高平、晋城和长治都设立了图片社或照相馆。

1993 年，生意做得好好的郜志成突然决定放弃照相馆，在闹市区开了一家粤菜馆，原因是“有了点钱，认识了一些朋友，感到当地餐饮业缺乏美食意识，而市场已有需求”。他给请来的广东厨师开出了一万多元的月薪，当时被很多人认为是“疯了”。

而郜志成最终仍然把粤菜馆经营成了晋城第一家。至于他为什么在 1996 年转向焦碳业，侯康告诉记者，“传说”他又是在经营饭店的过程中听说了焦碳业的“钱景”，才下决心投入的。

郜志成自己说，他一开始对于焦碳业“一点也不懂”，前两年“赔了 600 万”，但硬是花了功夫一点一点学起来。11 年后的今天，他已经是“无烟煤大比例配煤炼焦工艺”的国家专利持有人，据说仅凭一张化验单就可以知道一批原料能炼出什么样的焦炭。

郜志成又是怎样完成他的环保启蒙的，传说中没有提及。非常可能，与前几次一样，这个精明的山西人凭的是一种对未来趋势的直觉。用他自己的话来说，“有正确的赚钱观，才能赚持久的钱”。

（小标题）把“节能减排形象”包装上市

现在的郜志成，已经不再直接打理兴高的日常业务。他说，自己更多是考虑“策略性”的问题。但每月第一天，他都会在公司带领员工开“故事会”：把节能和环保的理念编成通俗易懂的小故事，大家一起学习。

对此，他向记者解释说，公司的工人 80%是附近的村民，让他们理解节能和环保，不能讲大道理，只能通过讲故事，“公司的干净归根到底不是老板，而是员工做出来的。”

除了工作以外，他每年都要花一段时间去全国不同的高校上 MBA。首先是在位于西部心脏的西安交大，然后是北大和清华，“主要是开阔眼界，还有在全国交朋友。”今年他打算去复旦，“学学上海人的生意经。”

而兴高的近期规划中，有两个除了焦碳和发电之外的新增长点。一是预计今年 10 月前后由国海证券承销在深圳中小板的上市；二是由农业部下属的弘远公司作中介，通过“清洁发展机制”（CDM）与德国一家公司交易减排量（CERs），如果成功，预期收益可以达到 115 万美元。

郜志成说，在这两件最重要的事中，“节能”理念和“节能减排”形象都是兴高最大且不可复制的“卖点”。

（插入）清洁发展机制（CDM）

清洁发展机制（Clean Development Mechanism）是《京都议定书》第十二条确定的一个基于市场的灵活机制，其核心内容是允许附件一缔约方（即发达国家）与非附件一国家（即发展中国家）合作：发达国家通过在温室气体减排边际成本相对较小的发展中国家实施 CDM 项目来完成一定数量的减排义务。

对于发达国家的企业而言，获得的减排量（CERs）可以用于履行其在国内的温室气体减限

排义务，也可以在相关的市场上出售获得经济收益。对于发展中国家而言，通过参加清洁发展机制项目合作可以获得额外的资金和（或）先进的环境友好技术，从而可以促进本国的可持续发展。

第二篇

“兴高”能被复制吗

（目录导读）“技术并不复杂，复杂的永远是政策”

（文章导读）“目前中国最需要的，一是政府官员和乡镇企业家从国际组织拿来‘意识’，二是找到一个可持续发展的减排机制”

《瞭望东方周刊》记者戴闻名/浙江杭州、山西高平、陕西西安报道

对于地球人而言，这场“减排战”是只能赢不能输的；对于站在历史机遇节点的中国来说，这场全球棋盘上的减排博弈也同样是只能赢不能输的。

但单凭一个兴高焦化或申河水泥，远远不能缩小中国庞大的排放量数据。“兴高”能被复制吗？如何说服2300多万家乡镇企业都像“兴高”一样把目光投向业已国际化的节能技术市场，与政府一起“减排”，并从中找到企业的新生命点？

这个问题，有一批人思考和试验了整整六年。

（小标题）六年磨合出的“减排结合体”

支撑起“兴高神话”的，除了郜志成的“智商”和“胆商”之外，还有这个在六年中精心设计又不断被修正的“减排机制”。

中国农业部、全球环境基金、联合国开发计划署和联合国工业发展组织从2001年开始联手实施了“中国乡镇企业节能与温室气体减排”项目。它的目的，除了帮助一批乡镇企业节能之外，更重要的，是试图寻找一种可以被其它乡镇企业模仿的中国特色“减排机制”。

这个历经六年磨合出的“减排结合体”包括国际组织、中国农业部和被选定的乡镇企业三方。

国际组织与乡镇企业签定“自愿协定”——前者提供国际技术支持和小部分的资金激励，后者投入主要资金引进节能技术。农业部负责筛选示范企业和为企业与国际节能技术专家建立联系，以及在此过程中不断为心存忐忑的乡镇企业提供信心和技术支持。

与所有的新生机制一样，三方磨合的过程，充满了犹豫、担心和对未来的不确定。浙江申河水泥公司董事长卫松根告诉记者，2001年对于是否参加这个项目，他经历了“激烈的思想斗争”。最大的不确定在于，引进的“纯低温余热发电”技术不成熟，能不能发电、能发多少电、什么时候能收回投资，“专家也不敢说”。

项目首席技术顾问、熟谙美国煤炭业历史和现状的能源专家张志宏帮助兴高焦化引入美国太阳焦碳公司的技术并加以改良，但他自己当时“也不太有信心这是否能在中国行得通”。除了技术风险之外，国内当时充满了“不同的声音和复杂的争论”。他当时比较肯定的，是“改善环境的大方向不可能错”。

六年后回望这两个幸运地成功了的企业，张志宏博士对《瞭望东方周刊》记者说：“技术并不复杂，复杂的永远是政策。”

（小标题）“六进农行”

在这个过程当中，还有“隐形”却不可或缺的一方，即融资方。乡镇企业的最大困难之一，即是获得商业银行的信任得到贷款，更何况是“搞环保”的乡镇企业。在这个项目中，全球环境基金仅给予了少量的资金支持，大部分的投资来源于中国农业银行、中国各级政府和企业自筹的贷款。

卫松根和他的管理层并不会说英语，却非常熟悉两个英文缩写：LPIC 和 RCF。前者是项目办为了获取最大的力量，特意成立的包括地方政府官员在内的“地方政策指导委员会”，后者则是专门为企业融资开创的“滚动基金”。

项目办主要负责人、中国农业部官员王桂玲自称有“六进农行”的经历。她说，第一次去农行谈为“乡镇企业节能”贷款，“人家根本不理。”通过一次一次对银行贷款人员进行“减排洗脑”，中国农业银行从预计投入 200 万美元，到最终发放了 1746 万美元贷款。农行甚至在因为这个项目在“农村信贷部”之下专门成立了“中小企业信贷部”。

如同尤努斯的“格莱珉银行”为穷人提供了融资渠道一样，RCF 的设立，帮助发展“减排经济”的乡镇企业获得了银行的信任。

王桂玲认为，RCF 的成果，不在于搞到了多少贷款，而在于“提供了一种帮助中小企业获得贷款的模式”。她说，六年后的今天，中央已经出台贷款向中小企业倾斜的政策之后，RCF 未来的角色也将随之发生变化。

（小标题）寻找中国的“尤努斯机制”

在被问及对于“中国乡镇企业节能与温室气体减排”项目的诚实评价时，独立评估专家弗兰克·普尔对本刊记者说，这个项目目前的节能和减排效果“非常之好”，但更重要的挑战在于，“过一两年、很多年会怎么样”，“可持续性如何”。

对此，王桂玲把她六年的经历总结成了两句话：第一，“这个机制不是完美的，但希望对中国整个行业有推动”；第二，“最好的不一定是最适用的，最适用的才是最好的”。

农业部一位官员把这个机制称为“利益攸关者模式”——“节能”利益归于企业，“减排”利益归于中国政府和国际组织，三方利益攸关，一赢俱赢。

“尤努斯模式对于中国政府的触动是很大的。现在可以肯定的是，政府主导环保的模式已经过时。目前中国最需要的，一是政府官员和乡镇企业家从国际组织拿来‘意识’，二是找到一个可持续发展的减排机制。归根到底，尤努斯的‘穷人银行’不正是一个符合孟加拉国情的模式么！”这位官员说。

第三篇

“减排”时代：先到者先得

（目录导读）“环保标签”时代已经结束，“减排经济”时代早已到来

（文章导读）信息技术革命首发地美国硅谷的许多中小 IT 企业，已经把增长点转向新能源和环保技术

《瞭望东方周刊》记者戴闻名/浙江杭州、山西高平、陕西西安报道

全球环境基金（GEF）项目经理张志宏博士至今还记得，与郜志成同期的一位焦碳老板也曾在 GEF 筛选的资助项目之列。但 2001 年恰恰是国际市场上焦碳最火的一年，于是这位老板拒绝了“节能减排”项目，理由是“你知道我一年炼焦能赚多少钱吗”。

笑到最后的，是先他一步的郜志成。

尽管大多数中国人对于诸如 GHG（温室气体）、CDM（清洁发展机制）等环境术语还相当陌生，但事实上，“节能”和“减排”早已悄然走出了专业领域，也不再是环保主义者的口号、跨国公司的化妆品，而成为与每一个商人甚至普通人切身利益息息相关的名词。

可以这么说，“环保标签”时代已经结束，“减排经济”时代早已到来。把握住了先机的人和企业，自然就取得了优势地位。

（小标题）“越不减排，未来就会越被动”

2006 年是中国有史以来气温最高的一年，也是长江水位最低的一年。进入 2007 年，最频繁出现在联合国新闻稿中的词就是“气候变化”。

联合国系统驻华协调代表兼联合国开发计划署驻华代表马和励（Khalid Malik）对《瞭望东方周刊》记者说：“思考和争论气候变化影响的时代已经结束了，我们已经进入了一个为后果‘买单’的时代。”

而为了应对这个变化，“减少温室气体排放”（简称“减排”）已经经由《京都议定书》等国际公约形成了“所有国家按比例共同买单”的机制。

目前，中国温室气体排放量仅次于美国之后列全球第二。中国国家环保总局副局长潘岳在今年 2 月接受媒体采访时承认，中国“减排”面临的压力非常大，因为能源结构中煤炭占了 85%，但“越不减排，未来就会越被动”。

（小标题）《能源法》实施细则即将出台

中国政府承受的“减排”压力意味着，关于企业——特别是污染较重的乡镇企业——“减排”的强制性法令和条文会陆续出台。

联合国开发计划署驻华代表处提供给本刊记者的数据表明：中国 50%的污染源来自乡镇企业，而、水泥、制砖、炼焦和铸造四个重污染行业就占到中国二氧化碳排放总量的 1/6。

中国农业部“中国乡镇企业节能与温室气体减排”项目办副主任王桂玲告诉记者，《能源法》实施细则即将出台，今后，能耗标准超标的企业将被罚税，节能企业则将在税收上得到返还。

在污染较重的水泥行业，今后“水泥厂设计中如果没有利用余热发电的设计，就得不到审批”。这也就是说，不但国有和大型企业要“环保”，一般印象中“能耗是高的、水平是低的、污染是大的”乡镇企业更是必须进入“减排时代”。

（小标题）“减排”于企业而言是机遇

联合国开发计划署驻华代表处能源与环境处项目经理、发展经济学专家塙龙一郎（John Hanawa）告诉记者，“减排”对于国家是一种义务，对于企业来说更可能是一种机遇。

为了说明这一点，他做了一个历史梳理：在近代，全球经历过两次特别重要的变革，第一次是工业革命，第二次是信息技术革命，而我们正在经历的，很可能就是第三次的环保和能源革命。

目前，信息技术革命的首发地美国硅谷的许多中小 IT 企业已经把增长点转向新能源和环保技术。2006 年新晋的中国富豪中，张茵和施正荣从事的正是这个行业。

王桂玲也告诉本刊记者，把“节能”冠于“减排”之前，是意味深长的：对于中小企业而言，“减排”压力更是一种运用新节能技术、降低成本的推动力。

在“中国乡镇企业节能与温室气体减排”项目中，位于浙江桐乡的申河水泥公司利用水泥窑低温余热发电，现在的年发电能力已经达到 2120 万千瓦时。每年，他们可以从“垃圾”中获得 1500 万元的经济收益。

“这是一场先到者先得的商机，在这个变革的过程中，如兴高焦化和申河水泥的中小企业很有可能是引领潮流的。”塙龙一郎说。

中国 100 个乡镇企业每年减排二氧化碳 110 多万吨
Source: 新华网
Xinhua
Updated: 17 May 2007
http://news.xinhuanet.com/fortune/2007-05/17/content_6112451.htm

http://news.china.com/zh_cn/news100/11038989/20070517/14103208.html
http://finance.jrj.com.cn/news/2007-05-17/000002242753.html
http://env.people.com.cn/GB/5744685.html
http://news.qianlong.com/28874/2007/05/16/83@3841039.htm
http://finance.ce.cn/macro/gdxw/200705/17/t20070517_11389503.shtml
http://www.cec.gov.cn/info/NewsDetail.jsp?news_id=40237
http://big5.gxny.gov.cn/?2007/0523/083606-1.html

新华网杭州5月17日电(记者姚润丰　李亚彪)中国农业部副部长危朝安17日表示,"中国乡镇企业节能与温室气体减排项目"实施6年多来,通过对制砖、水泥、铸造和炼焦企业进行节能技改,在乡镇企业的这四大高耗能行业建成8家示范企业,共带动了100家企业进行节能改造。这100家试点示范企业形成了年节能能力45.1万吨标准煤,每年减少二氧化碳排放112.6万吨。

危朝安是在此间召开的乡镇企业节能减排与循环农业国际研讨会上作上述表示的。这个项目于2001年3月在全球环境基金799.2万美元的资助下,由联合国开发计划署、联合国工业发展组织和中国农业部共同实施,项目旨在帮助中国制砖、水泥、铸造以及炼焦四个产业乡镇企业扩大使用高效节能技术,减少温室气体排放。

据项目主任、农业部科技教育司巡视员白金明介绍,这个项目在运行机制上有重要的创新,一是将节能自愿协议机制引入到乡镇企业,目前已有43家乡镇企业与当地政府签署了节能自愿协议,就企业中长期的节能减排活动向政府做了明确的承诺,政府根据本地的实际情况在税收、贴息、融资、研发等方面给予优惠政策。二是建立了高效的资金融合滚动机制,发挥了多方积极性,增强了持续发展能力。

记者采访中了解到,这个项目支持建成了中国第一家"五级新型干法水泥纯低温余热发电示范厂",使新型干法水泥企业真正实现能源梯度利用。截至目前,项目累计发电43922万千瓦时,节约标煤1.6万吨,减排二氧化碳4.2万吨。目前全国已经建成和在建的新型干法水泥纯低温余热发电示范厂约90余家企业。项目支持建成的中国第一家"清洁型热回收焦炉余热发电厂"累计发电1.43亿千瓦时,减排二氧化碳13.7万吨。

据白金明介绍,成功的示范引起了周边国家和地区企业的兴趣,来自印度、孟加拉、越南、澳大利亚、日本等国家和地区的企业家访问了项目示范企业,孟加拉国已经签署了制砖示范技术的引进协议。

Carbon emissions reduced
Source: China Daily
Updated: 17 May 2007
http://www.chinadaily.com.cn/cndy/2007-05/17/content_874261.htm

HANGZHOU: An international project has helped cut 1.1 million tons of carbon dioxide emissions in China annually by encouraging township and village enterprises (TVEs) to

adopt energy efficient technologies.

These "green" TVEs are mostly in the cement, brick, coking and metal casting sectors, which are estimated to be responsible for one-sixth of China's total carbon emissions, said the project's initiators with the United Nations Development Programme (UNDP) and the Ministry of Agriculture.

The achievement was announced yesterday at an international forum on rural energy efficiency held in Hangzhou, East China's Zhejiang Province.

It was a successful demonstration of how TVEs in developing countries can transform from heavy polluting and energy consuming to clean and energy efficient roles, said Khalid Malik, UN resident coordinator in China.

UNDP statistics show that TVEs, which account for 30 percent of China's gross domestic product, consume 30 to 50 percent more energy on average than State-owned enterprises using new technologies.

The $18.5 million project started with nine pilot sites in Shaanxi, Sichuan and Zhejiang provinces, and spurred the replication in 118 TVEs nationwide, with 400 more expected to follow suit soon.

A number of clean technologies have been introduced to the industries through the project, as they help both lower costs and reduce pollution.

Zhejiang Shenhe Cement Co Ltd, one of the pilot sites, has reduced about 20,000 tons of CO_2 emissions per year by building the country's first waste heat power generation plant, which collects waste heat from the cement kiln to generate electricity for a second utilization.

Frank Pool, a New Zealand-based independent sustainable energy consultant, said that its success was attributed to a logical and realistic design, in which national and local governments, TVE bosses and an entrustment loan facility were able to interact coherently.

"The project identified that there are still large untapped energy efficiency potentials in the four TVE sectors in China," he wrote in the final evaluation report for the project.

"In particular, there is a major challenge remaining to update the 100,000 brick kilns throughout China that provide 95 percent of local rural construction materials."

Improving energy efficiency of TVEs is part of the job to promote rural energy efficiency, which remains one of the priorities the Chinese government is committed now and in the future to curbing greenhouse gas emissions, said Wei Chaoan, vice-minister of agriculture

during the forum.

"Once the utilization of nitrogen fertilizer is improved by 1 percent, 2.5 million tons of coal equivalent will be saved," he said.

UN Project Promotes Green Rural Enterprises
Source: China Radio International
Updated: 17 May 2007
http://english.cri.cn/2946/2007/05/17/189@228240.htm

To help protect the environment, the United Nations and the Chinese Government on Wednesday jointly unveiled a sustainable model that aims to save energy and cut emissions in heavy polluting rural enterprises.

The six-year project is designed to test various models, aimed at promoting energy efficiency and cleaner method developments in major polluting sectors of "Township and Village Enterprises (TVE)", such as cement, brick, coking, and metal casting which are responsible for one-sixth of China's total carbon emissions.

The 18.5 million US dollar project was introduced at the International Forum on Energy Efficiency—in regards to small and medium enterprises (SME)—opened Wednesday in Hangzhou, Zhejiang Province. Delegates from 10 countries will participate in an 8-day tour to investigate key components of the project.

The Chinese Ministry of Agriculture, United Nations Development Programme (UNDP), United Nations Industrial and Development Organization (UNIDO) and the Global Environment Facility (GEF) are partners in the project, which will end in August.

The current number of TVEs in China stands at about 23 million, providing roughly 143 million rural jobs. However, they are also believed to be responsible for over 50 percent of nation-wide pollution.

The project established a barrier-removal methodology to facilitate TVEs' access to finance, new technology and markets. The program aims at upgrading outdated production methods and inefficient technologies of these rural enterprises, so they become both environmentally friendly and economically competitive.

In particular, the project set up an entrustment loan financing scheme, providing funding opportunities that encourage rural enterprises to invest their revenue in energy efficient technologies, thus helping to attract new investments of over 150 million US dollars.

Furthermore, the project also hopes to improve the livelihood of local communities. For example, in a pilot cement factory, waste heat generated during the production process

was used to create electricity for its own operations, while transferring the unused electricity to the local power grid.

To date, eight pilot demonstration sites in China's Shaanxi, Shanxi, Sichuan and Zhejiang provinces have combined to reduce carbon dioxide emissions by 200,000 tons per year.

These pilot sites were instrumental in spurring replication in an additional 118 TVEs, thereby helping to save an additional 2 million tons per year of carbon dioxide emissions. 400 more TVEs have since visited the pilot sites to learn from their models.

It's hoped the successful models will be replicated, to upgrade millions of TVEs in China and SMEs globally.

UN Resident Co-ordinator and UN Development Programme Resident Representative in China Khalid Malik says, "Increasing efforts in energy conservation and emissions reduction are urgently required to respond to global climate change."

"While TVEs account for 30 percent of China's GDP and play a critical role in poverty alleviation by generating income and creating millions of jobs for the rural poor, they are also characterized by high levels of energy consumption, inefficiency and pollution. With the right incentives and access to finance, we demonstrate that transformation can occur," states Malik.

中国政府与联合国共同为乡镇企业降低能耗减少排放做出努力
Source: 中国国际广播电台
China Radio International
Updated: 16 May 2007
http://gb1.chinabroadcast.cn/1321/2007/05/17/542@1593406.htm
http://gb.cri.cn/1321/2007/05/17/157@1593911.htm

中国国际广播电台消息(记者李琳)：中国农业部与联合国合作帮助中国污染严重的乡镇企业节约能源减少排放的模式获得成效，将被中国和世界上的中小型企业借鉴和推广。

这是记者16日从在东部城市杭州开幕的中国乡镇企业节能减排国际论坛上获悉的。

据介绍，全球环境基金投入799万美元开展的这一项目开始于2001年，这个为期6年的项目主要是帮助水泥、制砖、炼焦和铸造等污染较严重的乡镇企业获得资金、新技术和市场，减少环境污染排放，并提高产品市场竞争力。迄今为止，该项目共带动了中国陕西、山西、四川、浙江等省100多家企业进行节能改造。

中国乡镇企业的数量约有2300万，统计数据显示，中国50%的污染源来自乡镇企业。

农业部提出三大举措推进农村节能减排

Source: 中国农业信息网
www.agri.gov.cn
Updated: 17 May 2007
http://www.agri.gov.cn/xxlb/t20070516_817440.htm
http://www.lsz.gov.cn/govinfo/showdetail.aspx?lsinfoid=37660

5月16日，本网记者从农业部与联合国开发计划署（UNDP）、联合国工业发展组织（UNIDO）共同在浙江杭州举办的“乡镇企业节能减排与循环农业国际研讨会”上获悉，今后中国农村节能减排工作将以科学发展观为指导，围绕转变农业增长方式，发展循环农业；以节肥、节药、节水、节地、节能技术推广为重点，构建农村节约型生产和生活方式；以农业生产生活废弃物能源转换为重点，优化农村能源结构；以发展能源作物为重点，增加商品能源供应。

农业部副部长危朝安在开幕式上发言时说，当前，气候变化已经成为国际社会关注的热点和焦点，而应对气候变化的关键是要做好节能减排工作。中国政府高度重视节能减排工作，提出了“十一五”期间实现单位国内生产总值能耗降低20%和主要污染物排放总量减少10%的节能减排目标，并做出了明确部署。

农村节能减排是国家节能减排的重要组成部分，潜力巨大，前景广阔。如何抓好农村节能减排？危朝安指出，发展循环农业是农村节能减排的有效途径。他透露，今后一段时期，农业部将从三方面推进农村节能减排工作：

一是切实抓好能源节约。重点推进乡镇企业节能，加强乡镇企业能源消耗管理和节能设备更新改造，进一步淘汰土焦、小立窑水泥、粘土实心砖、小冲天炉等落后的技术、工艺和设备。在水泥企业推广纯低温余热发电技术、十八项立窑水泥节能节电技术，在炼焦企业推广清洁型回收余热发电、炉门密封技术等，在铸造企业推广新型熔炼技术，在制砖企业推广空心砖、新型节能转窑、窑炉密封、节能风机等节能技术。推进农业机械节能，更新淘汰部分老旧农业机械、高能耗老旧渔船和装备。提高农业机械生产性能，推广节能型船用柴油机、燃油添加剂和主机余热利用、燃用重油等节能技术产品。推进耕作制度节能，建立高效的耕作制度，积极推进农业耕作制度改革，改革不合理的耕作方式，实行免耕或少耕，大力推广保护性耕作，发展生态农业。推进畜禽养殖节能，推广集约、高效、生态畜禽养殖技术，降低饲料和能源消耗。推广节能养殖模式，充分利用太阳能和地热资源调节畜禽舍温度，降低畜禽舍加温和保温能耗。推进农村生活节能，更新改造传统的省柴节煤炉灶和节能炕，加快省柴节煤灶（炕）的升级换代。推广应用保温、省地、隔热新型建筑材料，发展节能型住房，在北方地区引导农民建造太阳房和使用太阳热水器。

二是大力开发可再生能源。在适宜地区大力普及户用沼气，发展集约化养殖场大中型沼气工程，推进人畜分离养殖小区的沼气集中供气工程建设。在粮食主产区，以农村居民炊事和取暖为重点，推广秸秆裂解气化、生物气化和秸秆固化成型技术。同时，按照不与人争粮、不与粮争地的原则，利用荒山、荒坡、盐碱地及冬闲田等土地资源，积极发展甜高粱、甘蔗、木薯和油菜等能源作物。

三是深入推进农业清洁生产。主要推广节肥节药技术，进一步调整优化用肥结构，提倡增施有机肥，大力推广测土配方施肥技术，提高肥料利用率。推广应用高效、低毒、低残留农药新品种，淘汰“跑、冒、滴、漏”的植保器械，推广低容量喷雾技术，减少农药用量。发展生态型畜牧业，积极推进畜禽适度规模养殖，加强畜禽养殖排泄物治理，在粪污相对集中的规模化养殖场或养殖小区，重点实施畜禽粪污能源利用工程，推广雨污分流、干湿分离和设施化处理技术。同时，加快标准化畜禽生态养殖小区建设。发展水产健康养殖，建设一批水产健康养殖示范区（场），合理投放饵料，推广生态养殖技术，加快建立渔业生态环境补偿机制。

据了解，多年来，中国政府积极推进节能减排工作，先后组织实施了农村沼气、省柴节煤灶、重点行业节能等项目。目前，中国农村沼气已发展到 2200 万户，每年为农村提供了 1350 万吨标准煤的高品位清洁能源；推广省柴节煤炉灶 1.9 亿户、节能炕 2000 万铺，年节能近 5000 万吨标准煤。近年来，农业部还组织各地开展了以农村废弃物资源化利用为重点的“乡村清洁工程示范”，示范区生活垃圾和生活污水处理利用率、农作物秸秆资源化利用率达到 90%以上，使 3 万多户农民的生产生活环境有了明显改善。为推动中国乡镇企业的节能减排，保护农村环境，在全球环境基金（GEF）的资助下，中国农业部与 UNDP、UNIDO 于 2001 年 3 月共同启动实施了“中国乡镇企业节能与温室气体减排项目”，重点支持中国制砖、水泥、铸造和炼焦四行业进行节能技术改造。项目实施后，使百余家试点示范企业形成年节能能力 45.1 万吨标准煤，每年减少二氧化碳排放 112.6 万吨。该项目在中国的成功示范，使菲律宾、孟加拉、蒙古、泰国、越南等周边国家和地区的企业家也产生了浓厚兴趣，纷纷参会并到示范企业参观取经。

推动乡镇企业节能减排新模式
Source: 中国证券报
www.cs.com.cn
Updated: 17 May 2007
http://finance.sina.com.cn/stock/t/20070518/05301413671.shtml
http://www.hi.chinanews.com.cn/newnc/2007-05-18/2743.html

在日前举办的中国乡镇企业节能减排国际论坛上，联合国与中国农业部根据项目成果共同推出了一个可持续的成功模式，帮助污染严重的乡镇企业节约能源并减少排放。

该项目总投入资金 1850 万美元，由农业部、联合国开发计划署、联合国工业发展组织和全球环境基金合作建立实施，在水泥、制砖、炼焦和铸造四个乡镇企业中的主要污染行业进行试点，树立提高能效、促进清洁发展的有效模式。而这四个行业占我国二氧化碳排放总量的 1/6。

该示范项目通过建立障碍排除机制，帮助乡镇企业获得资金、新技术和市场，更新过时的生产方式和低效技术，帮助这些企业减少环境污染，并提高产品市场竞争力。

迄今为止，该项目在陕西、山西、四川、浙江设立的 9 家示范企业每年减少二氧化碳排放 30 万吨。这些试点的成功推动该项目在 118 个乡镇企业得到进一步推广，从而，使得每年

减少二氧化碳排放约 200 万吨。

联合国帮助中国乡镇企业节能减排
Source: 联合国电台
UN Radio
Updated: 16 May 2007
http://www.un.org/chinese/radio/print.asp?NewsID=3601

联合国开发署在星期三于杭州开幕的中国乡镇企业节能减排国际论坛上宣布，该署实施中国乡镇企业节能减排项目五年多来，每年帮助中国减少了约 200 万吨二氧化碳排放量。开发署表示，中国有 2300 万乡镇企业，创造的就业机会多达 1 亿 4000 多万，然而中国一半的污染源也来自乡镇企业。联合国开发署在星期三于杭州开幕的中国乡镇企业节能减排国际论坛上宣布，该署实施中国乡镇企业节能减排项目五年多来，每年帮助中国减少了约 200 万吨二氧化碳排放量。

开发署表示，中国有 2300 万乡镇企业，创造的就业机会多达 1 亿 4000 多万，然而中国一半的污染源也来自乡镇企业。为此，开发署与工业发展组织、全球基金和中国政府合作，在水泥、制砖、炼焦和铸造四个重点污染行业的乡镇企业中，推广提高能效和减少二氧化碳排放的生产模式，并从山西、陕西、四川和浙江等地的试点企业推广到全国的 100 多家乡镇企业，为这些企业改进能效吸引了 1 亿 5000 万美元的投资。

农业部三项措施推进节能减排
Source: 农民日报
www.farmer.com.cn
Updated: 17 May 2007
http://www.farmer.com.cn/hy/st/hb/200705170480.htm
http://finance.ce.cn/macro/gdxw/200705/17/t20070517_11389598.shtml

本报讯（记者 师晓京）“当前和今后一段时期，农业部将从抓好乡镇企业的能源节约、大力开发农村可再生能源、积极推进农业清洁生产三个方面推进节能减排工作。”这是农业部副部长危朝安，5 月 16 日在该部与联合国开发计划署（UNDP）、联合国工业发展组织(UNIDO)于浙江杭州举行的“乡镇企业节能减排与循环农业国际研讨会”上所做主旨发言中表述的。

危朝安进一步阐明，发展循环农业是农村节能减排的有效途径，中国农村节能减排工作就是要围绕转变农业增长方式，发展循环农业；以节肥、节药、节水、节地、节能技术推广为重点，构建农村节约型生产和生活方式；以农业生产生活废弃物能源转换为重点，优化农村能源结构；以发展能源作物为重点，增加商品能源供应展开。

首先切实抓好乡镇企业的能源节约。一是推进乡镇企业节能。加强其能源消耗管理和节能设备的更新改造。二是推进农业机械节能。更新淘汰部分老旧农业机械和高耗能渔船装备，推广节能型船用柴油机、燃油添加剂和主机余热利用等节能技术产品。三是推进耕作制度节能。改革不合理的耕作方式，发展生态农业。四是推进畜禽养殖节能。推广集约、高效、生态畜

禽养殖技术，降低饲料和能源消耗。五是推进农村生活节能。加快省柴节煤灶（炕）的升级换代。推广应用保温、省地、隔热新型建筑材料，发展节能型住房。

第二，大力开发农村可再生能源。包括发展农村户用沼气和集约化养殖场大中型沼气工程；在粮食主产区以农民炊事和取暖为重点推进秸秆气化、固化技术；利用荒山、荒坡、盐碱地及冬闲田等土地资源，稳步发展甜高粱、甘薯、木薯和油菜等能源作物。

第三，积极推进农业清洁生产。一是推广节肥节药技术。大力推广测土配方施肥技术，提高肥料利用率；推广应用高效、低毒、低残留农药新品种和低容量喷雾技术，减少农药用量。二是发展生态型畜牧业。在粪污相对集中的规模化养殖场或养殖小区，重点实施畜禽粪污能源利用工程，加快畜牧业生产方式转变。三是发展水产健康养殖。推广生态养殖技术，加快建立渔业生态环境补偿机制。

危朝安强调，农村节能减排是国家节能减排的重要组成部分。据测算，全国氮肥利用率每提高 1 个百分点，就可减少氮肥生产环节的能源消耗 250 万吨标准煤。我国每年粮食种植产生 6 亿多吨秸秆，畜禽养殖产生 25 亿吨的粪便，可以实现废弃物的资源化利用。此外，农村还有大量宜农宜林荒山、荒坡和盐碱地可用于种植非粮能源作物。中国农村节能减排潜力巨大，前景广阔。

▶ World environmental experts are helping Chinese businesses turn green and also turn a healthy profit, **Wu Chong** reports from Zhejiang and Shanxi provinces

Above: A worker loads coke onto a truck at the Gaoping Xinggao Coking Group. The Shanxi plant has adopted waste heat recovery technology to save energy in production. Reuters

Green turns to gold

Down in a small valley in Northwest China's Shanxi Province stands a unique coking plant, which produces little noise or dust, no unpleasant smell and no smoke. Moreover, it generates electricity. This is Gaoping Xinggao Coking Group, a pilot site of a six-year international project that aims to help Chinese township and village enterprises (TVEs) cut carbon emissions.

The Shanxi coking plant is among an increasing number of Chinese businesses, which have now come to realize that energy efficiency is not only the right thing to do environmentally, but it also can be a profitable business, thanks to many effective international partnerships.

Xinggao used to be a small coking plant in the city of Jincheng before it adopted a new type of clean coking oven in 2003.

The oven, which extends about 30 meters long like a freight train, is operated under negative pressure, which means the pressure inside the oven is lower than that outside.

"In this way, waste gases in the oven are unable to leak out," explained Hou Kang, vice-president of Xinggao.

Coking is a heavily polluting industry, with huge energy consumption. Producing a ton of coke requires 1.3 tons of coal, 8 kilowatt/hours of electricity and 0.6 ton of water, which results in the emission of a nasty cocktail of sulfur dioxide, and greenhouse gases such as methane and carbon dioxide, Hou says.

In the same year, Xinggao was chosen as a pilot site by the TVE project, launched in 2001 by the Global Environment Facility, the United Nations Industrial Development Organization, the United Nations Development Program and the Chinese Ministry of Agriculture.

The project's initiators suggested that Xinggao utilize the waste heat resulting from the coking process to generate power, which the company can also sell.

Gao Zhicheng, president of Xinggao, says that his decision to implement the 300 million yuan ($39.2 million) project was not an easy one. "No one in China had done this before. It was a risk," he said.

Pipelines were soon erected connecting the oven, four boilers, a turbine and a cooling tower. They carry waste gases as hot as 1,050 C in the oven to heat up water in the boilers, during which the heat is exchanged and generates power to drive turbines to produce electricity.

After that, the high-temperature waste gases are cooled to 180 C, desulfurized and emitted mainly as nitrogen gases. In addition, after the heat exchange, the water is used to extinguish the coke flames.

In 2005, when Xinggao's waste-heat power generation plant became operational, it quickly became an exemplar of utilizing waste to help protect the environment and make a profit. The plant has an annual generating capacity of 120 million kilowatt/hours, only 3 percent of which is needed to maintain Xinggao's operations. The company sells the remainder to the public grid, from which it earns about 25 million yuan ($3.3 million) a year.

According to Hou, the operation of both the waste-heat power plant and the clean oven can help the company refrain from burning 460,000 tonnes of coal equivalent each year, therefore preventing the emission of 115,000 tons of carbon dioxide annually.

Last year, the company reached an agreement with a German company to sell its carbon emission reductions (CERs) for $10 a ton under the Clean Development Mechanism, a part of the Kyoto Protocol launched in 1997.

"It was a surprise. Now we have three sources of income – coke, power and carbon," Hou says.

Now the company receives visitors from home and abroad almost every day. "Many coking plants are copying our model. Two of them are in the same city as us," Hou adds.

Xinggao is just one example. The project has helped more than 100 TVEs in the coking, cement, brick and metal casting industries cut carbon dioxide emissions by more than 1.1 million tons annually.

The key element of this project is to encourage TVEs to upgrade their technologies to reduce carbon emissions. Besides Xinggao, many coking plants and cement factories in China have equipped themselves with waste-heat power generators.

The Chinese government has also set out rules requiring all new cement factories to build such facilities connected with their kilns.

The TVE project is just one example of the international partnerships lending support to Chinese enterprises in their switch from energy consumption to energy efficiency. In addition to upgrading technologies, cost management is also a key element of their approaches.

In Zhejiang Province, a Sino-German project on cleaner production is also under way and has made significant progress.

A consultancy and training program, the Environment-Oriented Cost Management (EoCM) program, which was launched in 2004, aims to address industrial pollution and waste of energy through a "unique approach," says Rolf Dietmar, the program's director at GTZ (German Technical Cooperation).

Left: Rolf Dietmar, director of the Environment-Oriented Cost Management program with GTZ (German Technical Cooperation) Wu Chong

It is "unique" in two ways, Dietmar says – being "profit-oriented" and "do-it-yourself".

"We don't order companies to be environmental. Instead, we tell them that we can help them increase their efficiency and cut their costs," Dietmar adds.

In his opinion, few bosses of private companies, especially small and medium-sized enterprises (SMEs), have implemented the concept of a differentiated cost management.

They are unaware that any waste of raw materials, power or water may jeopardize not only the environment, but competitiveness and sustainability of their businesses, he adds.

The program therefore offers EoCM, an instrument tailored for SMEs in developing countries and conducts special training for selected companies on how to use it.

"It is different from other approaches," says Dietmar, who has been in China for eight years. "It is not about getting an outside expert to teach companies what they should do. Instead, we ask companies to identify problems and develop appropriate solutions themselves."

In a county downtown Hangzhou, Zhejiang Lantian Environmental Protection High-tech Co Ltd is one of the beneficiaries of the program. In late 2004, the company sent its senior staff to take part in EoCM training.

Lu Zhengzhang, head of a factory belonging to Lantian, recalls that every employee of the workshop participated in discussions about where and how to reduce its non-product output.

The company produces Freon substitutes, which require a lot of catalysts that are heavily polluting and hard to realize. "So we decided to begin with the catalyst," Lu said.

They detected that the facility was made of a metal that could increase the consumption of catalysts, so they replaced it with another material to extend the use of catalysts.

Then, by adopting new technology, they began to be able to recycle catalysts. "Not only has the use of catalysts been reduced, but the water and power consumption has also decreased," Lu says.

Since 2004, the workshop has implemented 27 measures, which have resulted in the reduction of water consumption by 60 percent, power consumption by 3.2 percent and waste catalysis by nearly 90 percent, all for an investment of just 342,000 yuan ($44,700).

Now Lantian has applied EoCM in all three factories. More importantly, when they began to add new facilities, they take into consideration energy efficiency and cost management issues, such as water condensate recovery.

By 2006, employees at 15 companies were trained in the program and all of them are still implementing EoCM during their production. This year, the program plans to train staff at another 10 companies.

According to Dietmar, the success of the program lies in its aim for capacity building, rather than a one-stop service.

The Zhejiang government issued a circular early this year to include EoCM into its local cleaner production management framework, which means any local enterprises can obtain a cleaner production certificate by passing either the national cleaner production audit or EoCM audit. And companies with cleaner production certificates will be likely to receive subsidies from the local government.

Whatever approach they take, these projects are taking China along the road of energy saving, helping to tackle global warming. The Chinese government has outlined a goal of reducing energy consumption per unit of gross domestic production by 20 percent by 2010.

With this goal, more and more Chinese companies are taking actions.

The bare-bellied way to put a dampener on a sizzling summer

HOT POT

PATRICK WHITELEY

One of the best ways to utterly dampen the cheerful mood of a friendly dinner party is to serve up the subject of global warming. What a party pooper!

"The end is nigh, the sky is falling, the temperatures are soaring, the oceans are rising, the floods will wash us all away and, excuse me... may you pass the soy sauce?"

As summer starts to sizzle in the Middle Kingdom, the warmer weather, for some, prompts gloomy discussion of the world's pending doom.

For me, a Chinese summer is not a bummer. It is a season of intriguing and spectacular sights, the first of which are those absolutely fabulous bellies that parade the streets with pride.

The rising mercury forces T-shirts to rise too, exposing some of the best bellies in the world as they bounce and jiggle. I especially like the big, fat Buddha-style bellies, blubbering around with purpose and poise.

The art of baring one's belly is not just an old man's game, it is practiced by men of all ages. I was gobsmacked to see a really hip 20-something guy bare his belly, right in front of me. He was wearing torn designer jeans, Elton John-style monster sunglasses, moccasins and a skin-tight bright orange singlet. As we were about to pass on the footpath, he rolled up his singlet and bingo!

From my experience, the bare-belly cooling technique works best when walking. The whole process functions the same way a car's radiator chills out the engine.

The big bellies are the best. Girl-like bellies, such as David Beckham's taut and trim tummy, are very hard to stomach. Some may say the Beckham belly is "ab fab", but I call it an absolute disgrace. Many football navel gazers support my view – they all say the soccer superstar lacks guts.

Another interesting summer outdoor practice, which I have rarely seen anywhere else, is the donning of pyjamas in broad daylight. I saw an elderly couple strolling down the sidewalk in their flannels, and it was a real head-turner. I saw another man cross-legged at the front of his hairdressing salon, wearing only his pyjama bottoms, at 4:30 in the afternoon.

In the West, if people wander the daytime streets in their PJs, many would call the police. Concerned citizens may think the curious wander had escaped from some mental hospital.

But I don't know why many of us Westerners think like that. Pyjamas are one of the most comfortable pieces of clothing and my recent observations have made me rethink my clothing code standards.

If I had my way, I'd wear pyjamas all day and night. I can jump straight out of bed, walk out the door and go to work. If it gets a bit chilly, I'll put on a dressing gown and some slippers. But this is nothing new. The ancient Chinese wore this outfit as their normal clothes, as did the Romans and the Greeks. And all these pyjama-wearing guys knew how to throw excellent dinner parties.

I'm not a history expert, but I am sure of one thing. They didn't bore their dinner party guests senseless with talk of global warming.

REVIEWS

AUCTION

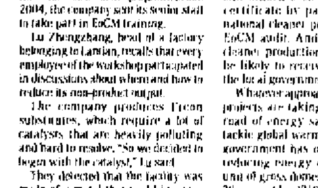
Artworks

More than 1,100 pieces of Chinese art with a total value of 200 million yuan ($25.60 million) feature in the spring auctions of the Council International Auction Co Ltd. at Beijing's Asia Hotel this weekend. Works can be previewed at the hotel.

Highlights include works of best-selling contemporary Chinese artists at the world market, ancient calligraphies, and seals of 20th-century master artists.

In the contemporary art section, *Mask* (pictured) by Zeng Fanzhi has won much acclaim. Created in 1998, the oil painting depicts a man wearing a mask that appears to be part of his face.

Of more than 200 ceramics to go under the hammer, 17 from the royal collections of the Qing Dynasty (1644-1911) are among the best on the market this spring.



MOVIE

The Chinese Botanist's Daughter

Directed by Dai Sijie, starring Li Xiaoran, Mylene Jampanoi

This French production was shot in Vietnam, but the story was set in 1980s China. A stern botanist has an intern, a beautiful half-Chinese, half-Russian young woman whose parents were killed in the Tangshan earthquake in 1976. She and the botanist's daughter become lovers, but the old man eyes the intern as his daughter-in-law. His son, a soldier stationed in Tibet, marries her, but abuses her when he finds out she is no longer a virgin. The story ends tragically when the father stumbles upon the truth, and the daughter, in an effort to prevent him from hurting her female lover, accidentally kills him. Both young women receive the death sentence.

The movie pits traditional bigotry against unconventional love. Like Dai's previous movies, this eternal theme is given a French texture. The characters seem to be vaguely Chinese, yet think and act in a decidedly French fashion. It is a work of a Chinese artist who knows exactly what his target audience wants and serves them a mixture of erotica and exotica that they believe is a Chinese connection.

EXHIBITION

A+A

A showcase of works created from the unique angles of twenty young artists from Beijing, Chongqing and Sichuan. Includes 150 oil paintings, photos and architectural models, the exhibition, titled *A+A*, continues at the PIFO New Art Studio in Beijing's 798 Art Factory until Saturday.

Born in the 1970s and 1980s, the artists' observations differ greatly from the outlook of older best-selling artists. While works by senior Chinese artists continue to fetch high prices on the world market, galleries and dealers on the mainland now favor the emerging scene.

Global praise for factory with 'scent of flowers, songs of birds'

Stephen Chen

Foreign praise for the "cleanest coking factory in the world" is music to the ears of 24-year-old boiler engineer Zhang Chao (張超).

He describes the Gaoping Xinggao Coking Chemical Co's plant in Gaoping (高平), Shanxi province (山西), as a place with "no smell, noise or dust but the scent of flowers and the songs of birds".

As international influence infiltrates the mainland, industry upgrades its infrastructure and living standards rise, the prospect of working on environmentally friendly projects is becoming a recruitment magnet for a younger generation of workers, entrepreneurs, officials and scientists.

The plant is also attracting the interest of advocates of energy conservation and emissions reduction from around the world.

The United Nations Development Programme (UNDP) chose the plant as a greenhouse gas emissions reduction pilot plant in 2004. It produces 400,000 tonnes of coke and generates 120 million kWh of electricity each year by using residual heat, a technology that helps it to reduce carbon dioxide emissions by 115,000 tonnes a year. The factory claims its emissions of dust and pollutants are less than a tenth of the maximum amount specified by national standards.

Human resources director Hou Gong (侯鞏) says the plant's green credentials give the group an advantage in hiring some of the best and brightest employees. On average, at least five candidates compete for each position, and those hired are usually university or college graduates.

Mr Hou says the plant employs about 700 workers, most of whom are in their 20s or early 30s and are "hard-working, ambitious, innovative and full of vision".

"Our workers' professional knowledge, techniques of training and overall qualities are higher than average," he says. "It gives us an edge over our competitors."

Senior electrician Ren Yutec (任鈺特), 23, says that during his last year in college, he and his classmates dreaded the possibility of ending up with a coking job and tried everything they could to avoid it. The plant where he worked as an intern was a "living hell", he says.

"Dust could stain your collar within five minutes of going outside. The noise was deafening. You felt dizzy all day from the smells. There was no quality, joy or hope working there."

Mr Ren says the Xinggao plant was not the highest-paying or the biggest employer to offer him a job, but he was attracted by the prospect of working for a factory that cared about the environment.

"The older generation may sacrifice their own health working in a harmful environment for a bit of extra income," Mr Ren says. "But I won't."

Frank Pool, an expert in the development of sustainable energy who was hired by the UNDP as an independent assessor, says the Xinggao plant had achieved world-class energy efficiency and environmental standards by spending almost 10 per cent of its total investment on environment-related projects.

Mr Pool says that when he first visited the site everything was so clean and quiet that he thought the plant must have stopped running. "Suddenly the stove doors opened and red-hot coke rolled out," he says. "It's a miracle."

For group president Gao Zhicheng (郜志成), 41, the decision to adopt the latest technology and go green was based on a desire to not live in shame and fear – the shame of creating massive pollution and the fear of environmental authorities.

In the past two years, Gaoping has closed down hundreds of small and medium-sized industrial plants, according to local officials.

"Villagers were angry and feared the plant when it was built 11 years ago, but now I am their good friend," Mr Gao says. "Times have changed. We cannot continue our business by lowering our heads and hiding our tails any more."

He says the company will be listed on the Shenzhen stock market, and he is confident the plant will become one of the coal-rich province's biggest within a few years, all thanks to the "widely recognised environmental effort, advanced technology, competitive workforce and good quality products".

About 40km north of Gaoping, 27-year-old Li Zhi (李智) heads up a team of nine young government officials at the Changzhi (長治) Municipal Development and Reform Commission. The commission is charged with managing 120 billion yuan in investment projects. Most are related to energy efficiency and environmental protection.

The former IT technician says he quit a good job in Beijing and returned to Changzhi, his birthplace, to "contribute something to the take-off of the local economy".

Meanwhile, the city government had decided to upgrade its coal-based industries by investing heavily in new technology. Sales of coal, coke and iron accounted for more than 75 per cent of the city's gross domestic product last year.

Mr Li's job is to visit factories, determine what they need to improve and help them reach out to investors. He says his team has created more than 300 investment projects, each worth more than 10 million yuan, within two years. Half of the projects are already under way.

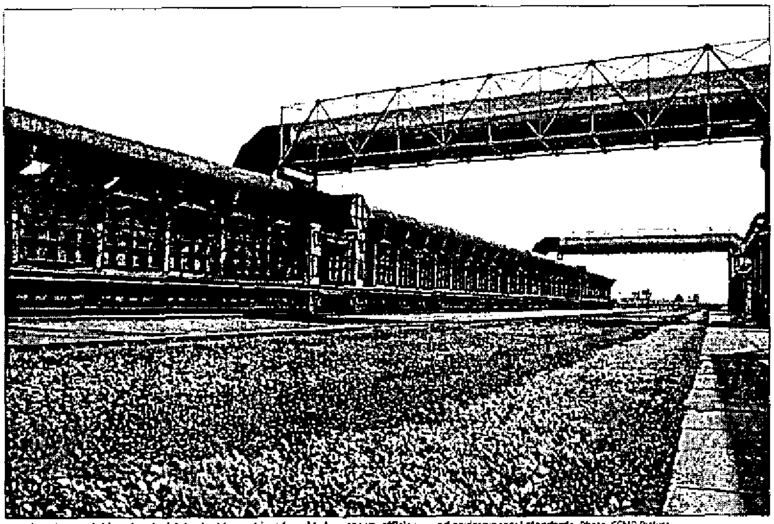
Mr Li, the deputy director of the commission's department of project management, says the average age in his department is 25. He says the leadership is relying more on young people, not only because they are energetic and hard-working, but also because they have a better sense of the latest trends in development and technology.

"All of [the staff] are university graduates majoring in economics, linguistics, the environment, engineering and even forestry," he says.

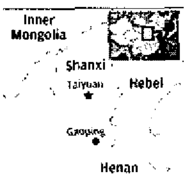
"Nowadays government officials cannot simply visit a factory and ask about its scale, sales and taxes.

"The future of our industries depends on technological innovation, saving energy and environmental protection."

Monitoring projects consumes most of his time, but Mr Li and his team are also creating the largest online technology and environment investment database in Shanxi. "We are trying all the possibilities to find a sustainable economic development model suitable for a landlocked city in central China," he said.



Gaoping Xinggao Coking Chemical Co's plant has achieved world-class energy efficiency and environmental standards. Photo: SCMP Picture



SCMP Graphic

Fuelling the fire

In 2005, the US produced most of the globe's carbon emissions, at 21 per cent

China's 2005 share of emissions

18%

> Villagers were angry and feared the plant when it was built 11 years ago, but now I am their good friend. Times have changed. We cannot continue our business by lowering our heads and hiding our tails any more
>
> Gao Zhicheng, group president

Reluctance to go green stifles rural ventures

Stephen Chen

Environmental scientist Zhang Zhihong (張志紅) says it is extremely difficult to find an entrepreneur in rural areas of the mainland interested in talking about the environment.

Dr Zhang is the chief scientific consultant on a six-year, US$18.5 million programme by the UN and central government to save energy and cut emissions in township and village enterprises (TVEs) in four provinces.

Official estimates suggest coking, brick-making, cement and metal-casting operations of TVEs account for a sixth of the mainland's carbon dioxide emissions and half its industrial energy consumption.

"Even though our project's ultimate goal is to improve energy efficiency and reduce greenhouse gas emissions, experience has told us it's better not to mention too much about the environment in our discussions with TVE entrepreneurs," he said. "They are not interested."

In most cases, the UN experts instead lay the promise of immediate economic return on the table.

Dr Zhang, programme manager for the Global Environment Facility, explained that when residual-heat-generation technology was proposed to a coking plant owner in Shanxi province (山西), the businessman said it was unnecessary because the existing technology was profitable enough, then doubled his production. Two years later, the coke price plunged and the plant owner regretted turning down the offer, which may have saved significant costs.

"The lack of vision is common ... they don't see the need to prepare for bad business times or the risk of tighter environmental restrictions," said Dr Zhang.

Frank Pool, an independent sustainable-energy consultant, said the reluctance of rural entrepreneurs to accept new ideas was to be expected. "They have seen the Great Leap Forward, they have seen the Cultural Revolution, and they have survived."

He said that when the market economy began to emerge, they ended up as managers of defunct businesses that probably owed the bank money, were inefficient and were closely tied to local politics.

"Most of them failed. Those who survived became intensely practical, worried about all the costs, worried about the bottom line, worried about shipping it out the door and getting paid for it."

Vague property rights have added to the reluctance of TVEs to invest in new technology and conservation of the environment.

Ling Fengli (凌鳳立), manager of Xian's (西安) biggest brick plant, says he could have solved some of the problems at his business with an automated production line, but hesitated to make the investment because of uncertainty over the length of the company's land lease.

"The land belongs to the village, and its allocation arrangements often change when the village leadership changes," Mr Ling said. "In the countryside, local officials' administrative power is sometimes more powerful than national laws."

The Liucun Hollow Brick Plant produces 50 million energy-efficient bricks a year, and through the UN's efforts, is doing so while using 25 per cent less energy and cutting carbon dioxide emissions by more than 3,000 tonnes.

But the plant is finding it more difficult to recruit labour because young people are shunning dirty, back-breaking work. Most of the plant's workers are aged over 40.

Embarrassing setback on emission targets

Shi Jiangtao in Beijing

The mainland's anti-pollution effort has suffered an embarrassing setback, with only four provinces and municipalities managing to meet emissions-reduction targets last year, a newspaper reported.

Highlighting the growing concerns over the possibility of missing the targets again this year, Beijing has stripped provincial governments of the power to issue pollution-control statistics, the *21st Century Business Herald* reported yesterday.

The governor of western Gansu province (甘肅省), Xu Shousheng (徐守盛), was quoted saying the province had met targets to cut acid-rain-causing sulfur dioxide and a key water pollution measurement, chemical oxygen demand (Cod).

"Last year, Gansu reduced emissions of sulfur dioxide by 3.02 per cent and Cod by 2.2 per cent, making it one of four provinces and municipalities which have met the national targets," he said.

Beijing, Tianjin (天津) and Jiangsu (江蘇省) had also met the targets, set under the 11th Five-Year Programme, of cutting emissions of sulfur dioxide and Cod by 2 per cent a year.

After relocating the capital's worst polluter, Shougang Steel, Beijing cut emissions of sulfur dioxide by 5.2 per cent and Cod by 7.9 per cent.

But sulfur dioxide emissions increased by 463,000 tonnes, or 1.8 per cent, across the nation last year, and Cod increased by 1.2 per cent.

Although regions that met their targets were keen to publicise their accomplishments, the poor overall results have apparently prompted officials to abandon plans to publish statistics twice a year.

Officials from the State Environmental Protection Administration said in the report it was up to the central government to announce the provincial results.

EU pressures Beijing on trade surplus, rights

Agencies in Hamburg, Germany

The European Union urged the mainland yesterday to further open its markets to help redress a "huge" trade surplus with the bloc and called on it to ratify a key rights covenant.

EU External Relations Commissioner Benita Ferrero-Waldner said after meeting Foreign Minister Yang Jiechi (楊潔篪) she had also stressed the need to tackle climate change.

"I mentioned the huge trade deficit that is there – in the year 2006, €120 billion [HK$1.26 trillion]. That's a huge deficit and therefore we really want to get market access."

Mr Yang declined to comment after the meeting in the German city of Hamburg before heading for further talks with EU ministers.

Mrs Ferrero-Waldner said Mr Yang had brought up the issue of an EU arms embargo Beijing wants lifted, after which she pushed Beijing to ratify the International Covenant on Civil and Political Rights.

"That certainly should be ratified," she said when asked if she had raised EU concerns about labour rights standards on the mainland, which many Europeans see as a threat to their jobs.

The European Union has imposed an embargo on arms sales to China since the 1989 Tiananmen crackdown and made lifting it conditional on progress on human rights.

Separately, Mr Yang also met Japanese Foreign Minister Taro Aso for about 75 minutes and they agreed to accelerate talks on a dispute over gas exploration rights in the East China Sea, so as to compile a joint development plan by the autumn, according to Mr Aso.

Reuters, Kyodo

News Briefs Around the Nation

Beijing

Moon explorer planned
The mainland will launch a vehicle to explore the moon's surface for three months as part of its 2012 lunar programme, the project scientist, Ouyang Ziyuan (歐陽自遠) said. The *Beijing Morning Post* reports all components for the lunar project will be domestically made.

Cost of official trips bemoaned
The *International Herald Leader* has urged authorities to make sure that officials going abroad "learn lessons from foreign counterparts" because the trips are expensive. More than 200 official groups went to South Africa alone every year, with the cost of each trip about 40,000 yuan per person.

Street vendors get a break
Unlicensed street vendors picked up for minor legal infringements in Beijing may only have to take part in an educational seminar and have their identity card number recorded for a first offence, municipal authorities say. The *Beijing News* reports the penalties are in contrast with previous heavy fines.

Sculpture academy formed
The Chinese Sculpture Academy has been set up under the China Arts Research Academy in Beijing, Xinhua reports. Wu Weishan (吳為山) has been appointed director, with the task of turning it into a research institute.

North/Northeast

14 injured in restaurant fire
LIAONING (遼寧省) – Fourteen people injured in a restaurant fire in Chaoyang (朝陽) on Saturday night are in stable condition, Xinhua reports. One sustained burns and the rest were hurt jumping from the building.

East/Southeast

Tax on rare metals to rise
JIANGXI (江西省) – The central government will raise taxes on exports of some rare metals, such as tungsten, to stop rapid exploitation of reserves, which may be used up in just a few decades, a State Council official said. Wu Rongqing (吳榮慶) said the metals were vital to industry, Xinhua reports.

Snakehead kingpins jailed
FUJIAN – The Fuzhou Intermediate People's Court sentenced four smuggling kingpins to between five and 10 years in jail, the China News Service reports. The court also jailed 21 other members of the group after they were picked up by police, along with 17 clients, at the end of 2005. The group offered to smuggle people to Latin America.

Workers missing after cave-in
JIANGSU (江蘇省) – Two people were missing in a cave-in at a subway line construction site in Nanjing (南京), Xinhua reports. Thirteen workers were underground and 11 made it to the surface alive. Safety inspections were ordered at other subway construction sites in the city.

West

New drugs echo tradition
YUNNAN (雲南省) – More than 100 types of pharmaceutical products derived from traditional treatments developed by ethnic minorities have been approved for market release, Xinhua reports. Yunnan has about 6,500 biological sources of traditional Chinese medicine, a fifth of which are unique to the province.

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《瞭望东方周刊》记者郝赫/山西高平报道

兴高：行将上市的无烟神话

山西的一家乡镇企业正在准备把"节能减排形象"包装上市，并打算通过国际市场交易温室气体减排量

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兴高焦化位于山西高平市马村镇，属于晋城地区。高平历史上最著名的一笔，发生在战国时期——一个"纸上谈兵"的赵括折兵40万的"长平之战"，就发生在这里。

除此之外，高平只是个不起眼的晋东小镇，当地民居的颜色也多是灰蒙蒙的，空气中偶尔还会飘来二氧化硫的味道，非常符合初次造访者对于煤乡小镇的想象。唯一让人印象深刻的，是很多民居的门额上都有寄托美好理想的四字匾额，比如"麟趾万里"、"耕读传世"。

每三天就会有代表团来参观

取名意为"振兴高平"的兴高焦化集团和它的创始人郝老成，却让平凡的高平显得有些与众不同。

晋城盛产无烟煤，是全世界三大无烟煤田之一。无烟煤俗称"白煤"，但全世界的焦化产业都堆烧烟煤，"白煤不能炼焦"是几百年的行业定律。但郝老成居然就在2001年用白煤炼出了符合国家冶金标准的焦炭。

也是在2001年，兴高焦化加入了中国农业部、全球环境基金（GEF）、联合国开发计划署（UNDP）和联合国工业开发组织（UNIDO）实施的"中国乡镇企业节能与温室气体减排"项目，投入巨资引进了"清洁型热回收焦炉"，把炼焦的副产品全部燃烧并用来发电。

六年前，节能和减少温室气体排放多半还只是艺术家和环保人士关注的事情，但这家山西的中型乡镇企业居然敢把大笔资金投入进去。兴高副总经理倪建说，当时心里是很忐忑的，一是"创新风险"，就是国际专家介绍的焦炉在咱高能不能奏效，是不是确实无污染，谁也不敢打保票。二是"政策风险"，国家和省里对节能企业的扶持是不是不变，他们心里也没数。

而当时，国际市场上的焦炭价格才到了100美元一吨，几乎所有的同行都在拼命扩大产量。

郝老成告诉《瞭望东方周刊》记者，当时很多人反对，但他之所以敢于肯定地搞"环保"，就是因为他觉得每个行业都有一个"切入点"，对于焦化企业来说，环保和节能就是这个点——"就像人一样，一个行业最终也要追求健康长寿"。

现在，国际市场上焦炭的价格早已翻番，而气候变暖却成为全球性的课题。年产40万吨焦炭、发电1.2亿千瓦时的"联合国样板"乡镇企业"兴高"也具有了国际性的知名度。

倪建说，现在平均每三天就会有一个国际国内的代表团来参观，"一开始村民还会围观，现在已经习以为常了。"

印度著名的塔塔公司在计划投产焦炭厂的时候，就特别派出一个工程师团来兴高考察过。

来兴高一定要穿白衬衫

《瞭望东方周刊》记者5月19日到达兴高之前，听到了两个有意思的故事。

一个来自新西兰人弗兰克·普尔（Frank Pool）——联合国开发计划署和"全球环境基金"聘请的节能减排项目独立评估专家。

两年前，大个子专家弗兰克第一次来到兴高焦化，大为惊异，厂区里没有一股烟，一丝粉尘。他立刻联想到，兴高一定是像很多中国的焦化厂一样，为了应付"外国领导"的检查暂时停产了。一直到他被带到焦炭车间，亲眼看到半小时后出炉的焦炭，他才能面相信。

记者向弗兰克印证这个传说时，他说，一点没错。记者请他用一两个词来形容对兴高的印象，弗兰克说是"令人难以置信的干净"。记者又问，这样的洁净程度在全世界同行中处于什么水平，出乎记者意料，弗兰克回答说，就他本人来说，"在世界上从未见过"。

随行的中国农业部科技教育司综合处处长高尚宾印证说，他在美国参观过著名的太阳焦炭公司，"里面管道很多，工人都穿着深灰色，地面也是黑的"。

第二个故事来自于"全球环境基金"项目经理、"中国乡镇企业节能与温室气体减排"项目首席技术顾问张志宏博士。张志宏回忆说，他第一次来兴高的时候，郝老成告诉他，来兴高一定要穿白衬衫，赌一件换十件。果不其然，白衬衫一尘不染。5月19日这天，张志宏特意又一次穿了白衬衫，五个小时之后出来，仍然很干净。

张志宏说，没有见过传统焦化厂的人很难感受到这种差别。他清楚地记得上世纪90年代末山西的景象：坐在大车里，沿线都是冒火冒烟的焦炭，而在高平，他说自己"第一次在山西看到了蓝天"。

记者跟随张志宏等专家来到高平的时候，天空万里无云，阳光灿烂。兴高焦化厂区也非常地安静，几乎没有行人，更看不到"满面尘灰烟火色"的工人，整个厂区都整洁得不像一家工厂，偶尔飘出的"烟"，也只是冷却塔上冒出的水蒸气。站在焦炭车间旁边的观察孔上，才能看到里面红红的炉火，感受到炙热的温度。而厂房之间的运输通道，也能心地由顺畅相连，避免粉尘飞扬。

"有正确的赚钱观，才能赚持久的钱"

郝老成把自己的工厂称为焦化行业的"彩色革命"，他说自己是同行中第一个把储围刷成彩色的。尽管许多中外记者都出于职业习惯对这家"完美"的工厂存有质疑之心，但也不得不承认，这至少是一家颠覆了焦化厂传统形象、比大多数同行更保洁卫生的乡镇企业。

51岁的"兴高"创始人郝老成在高平是个传奇人物。15岁那年，他从山区小镇只身闯北京，倒卖稀缺的计划指标的商品，在北京的观念启蒙，令他在今后的人生中做出了很多大胆且超前的跳跃性选择。

1987年，他与女婿一起开了一家照相馆，是高平最早的三家个体户之一，一年就赚一万元，当时真是了不得的。随后，他把自己的"艳光图片社"开到省城，为了很顺赚钱的话，比如顾客们的事，他就去村里镇上门服务。很快，他在高平、晋城和长治都设立了连锁社或照相馆。

1993年，生意做得好好的郝老成突然决定放弃照相馆，在同市区开了一家粤菜馆，原因是"有了点钱，认识了一些朋友，感到当地餐饮业缺乏美食高品，而市场已有需求"。他把请来的广东厨师开出了一万多元的月薪，当时被很多人认为是"疯了"。

但郝老成最终仍然把粤菜馆经营成了晋城第一家。至于他为什么在1996年转向焦炭业，倪建告诉记者，"传说"他又是在经营饭店的过程中听说了焦炭业的"钱景"，才下决心投入的。

郝老成自己说，他一开始对于焦炭业"一点也不懂"，头两年"赔了600万"，但硬是花了工夫一点一点学起来。11年后的今天，他已经是"无烟煤大比例配煤炼焦工艺"的国家专利持有人，据说仅凭一些化验单就可以知道一批原料能炼出什么样的焦炭。

郝老成又是怎样完成他的环保启蒙的，"传说"中没有提及。非常可能，与前几次一样，这个精明的山西人凭的是一种对未来趋势的直觉。用他自己的话来说，"有正确的赚钱观，才能赚持久的钱"。

把"节能减排形象"包装上市

现在的郝老成，已经不再直接打理兴高的日常业务。他说，自己更多是考虑"策略性"的问题。但每月第一天，他都会在公司带领员工开"故事会"，把节能和环保的理念编成通俗易懂的小故事，大家一起学习。

对此，他向记者解释说，公司的工人80%是附近的村民，让他们理解节能

清洁发展机制（CDM）

清洁发展机制（Clean Development Mechanism）是《京都议定书》第十二条确定的一个基于市场的灵活机制，其核心内容是允许附件一缔约方（即发达国家）与非附件一国家（即发展中国家）合作，发达国家通过在温室气体减排边际成本相对较小的发展中国家实施CDM项目来完成一定数量的减排义务。

对于发达国家的企业而言，获得的减排量（CERs）可以用于履行其在国内的温室气体减限排义务，也可以在相关的市场上出售获得经济收益。对于发展中国家而言，通过参加清洁发展机制项目合作可以获得额外的资金和（或）先进的环境友好技术，从而可以促进本国的可持续发展。■

和环保，不能讲大道理，只能通过讲故事。“公司的干净回报到底不是老板，而是员工做出来的。”

除了工作以外，他每年都要花一段时间去全国不同的高校上MBA，首先是在位于西部心脏的西安交大，然后是北大和清华，“主要是开阔眼界，还有在全国交朋友。”今年他打算去复旦，“学学上海人的生意经。”

而兴高的近期规划中，有两个除了焦炭和发电之外的新增长点，一是预计今年10月前后由国海证券保荐在深圳中小板的上市，二是由农业部下属的弘远公司作中介，通过“清洁发展机制”(CDM)与德国一家公司交易减排量（CERs），如果成功，预期收益可以达到115万美元。

韩志成说，在这两件最重要的事中，“节能”理念和“节能减排”形象都是兴高最大且不可复制的“卖点”。■

《瞭望东方周刊》记者殷呈悦/浙江杭州、山西高平、陕西西安报道

“兴高”能被复制吗

“目前中国最需要的，一是政府官员和乡镇企业家从国际组织拿来‘意识’，二是找到一个可持续发展的减排机制”

对于地球人而言，这场“减排战”是只能赢不能输的；对于站在历史机遇节点的中国来说，这场全球棋盘上的减排博弈也同样是只能赢不能输的。

但单凭一个兴高焦化或中州水泥，远远不能缩小中国庞大的排放量数据。“兴高”能被复制吗？如何说服2300多万家乡镇企业都像“兴高”一样把目光投向业已国际化的节能技术市场，与政府一起“减排”，并从中找到企业的新生命点？

这个问题，有一批人思考和试验了整整六年。

六年磨合出的“减排结合体”

支撑起“兴高神话”的，除了韩志成的“智商”和“胆商”之外，还有这个在六年中精心设计又不断被修正的“减排机制”。

中国农业部、全球环境基金、联合国开发计划署和联合国工业发展组织从2001年开始联手实施了“中国乡镇企业节能与温室气体减排”项目。它的目的，除了帮助一批乡镇企业节能之外，更重要的，是试图寻找一种可以被其他乡镇企业模仿的中国特色“减排机制”。

这个历经六年磨合出的“减排结合体”包括国际组织、中国农业部和被选定的乡镇企业三方。

国际组织与乡镇企业签订“自愿协定”——前者提供国际技术支持和小部分的资金援助，后者投入主要资金引进节能技术。农业部负责筛选示范企业和为企业与国际节能技术专家建立联系，以及在此过程中不断为心存忐忑的乡镇企业提供信心和技术支持。

与所有的新生机制一样，三方磨合的过程，充满了犹豫、担心和对未来的不确定。浙江中州水泥公司董事长卫世银告诉记者，2001年对于是否参加这个项目，他经历了“激烈的思想斗争”。最大的不确定在于，引进的“纯低温余热发电”技术不成熟，能不能发电、能发多少电、什么时候能收回投资，“专家也不敢说”。

项目首席技术顾问、熟悉美国煤炭业历史和现状的能源专家张老宏帮助兴高焦化引入美国太阳焦炭公司的技术并加以改良，但他自己当时“也不太有信心这是否能在中国行得通”。除了技术风险之外，国内当时充满了“不同的声音和复杂的争论”。他当时比较肯定的是“改善环境的大方向不可能错”。

六年后回望这两个幸运地成功了的企业，张老宏博士对《瞭望东方周刊》记者说，“技术并不复杂，复杂的永远是政策。”

“六进农行”

在这个过程当中，还有“隐形”却不可或缺的一方，即融资方。乡镇企业的最大困难之一，即是获得商业银行的信任得到贷款，更何况是“搞环保”的乡镇企业。在这个项目中，全球环境基金仅给予了少量的资金支持，大部分的投资来自于中国农业银行、中国各级政府和企业自筹的贷款。

卫世银和他的管理层并不会说英语，却非常熟悉两个英文缩写：LPIC和RCF。前者是项目办为了获取最大的力量，特意成立的包括地方政府官员在内的“地方政策指导委员会”，后者则是专门为企业融资开创的“滚动基金”。

项目办主要负责人、中国农业部官员王桂玲自称有“六进农行”的经历。她说，第一次去农行谈为“乡镇企业节能”贷款，“人家根本不理。”通过一次一次对银行贷款人员进行“减排洗脑”，中国农业银行从预计投入200万美元，到最终发放了1746万美元贷款。农行甚至因为这个项目在“农村信贷部”之下专门成立了“中小企业信贷部”。

如同尤努斯的“格莱珉银行”为穷人提供了融资渠道一样，RCF的设立，帮助发展“减排经济”的乡镇企业获得了银行的信任。

王桂玲认为，RCF的成果，不在于提供了多少贷款，而在于“提供了一种帮助中小企业获得贷款的模式”。她说，六年后的今天，中央已经出台贷款向中小企业倾斜的政策之后，RCF未来的角色也将随之发生变化。

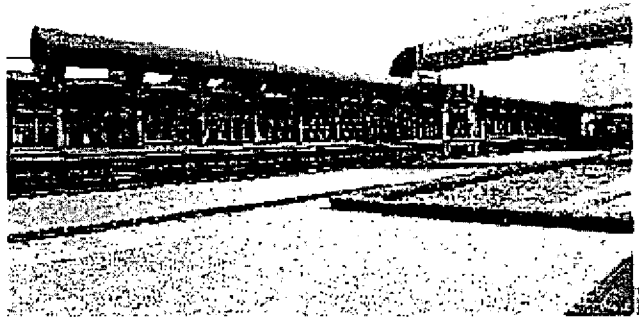
寻找中国的“尤努斯机制”

在被问及对于“中国乡镇企业节能与温室气体减排”项目的成果评价时，独立评估专家弗兰克·霍尔对本刊记者说，这个项目目前的节能和减排效果“非常之好”，但更重要的挑战在于，“这一两年，很多年会怎么样”，“可持续性如何”。

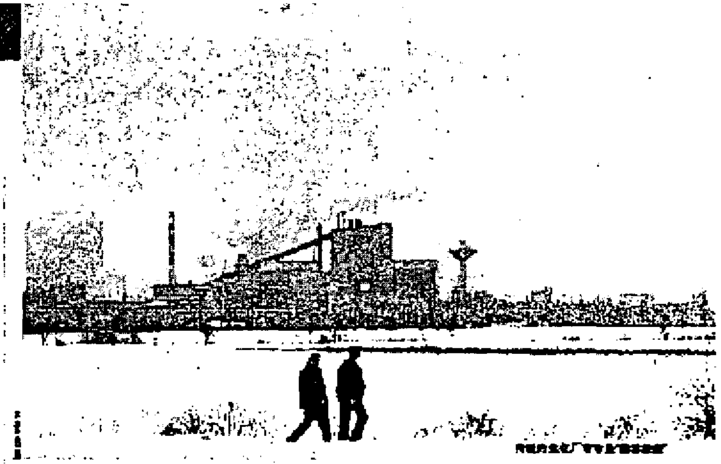
对此，王桂玲把她六年的经历总结成了两句话：第一，“这个机制不是完美的，但希望对中国整个行业有推动”；第二，“最好的不一定是最适用的，最适用的才是最好的”。

农业部一位官员把这个机制称为“利益攸关者模式”——“节能”利益归于企业，“减排”利益归于中国政府和国际组织，三方利益攸关、一荣俱荣。

“尤努斯模式对于中国政府的触动是很大的。现在可以肯定的是，政府主导环保的模式已经过时。目前中国最需要的，一是政府官员和乡镇企业家从国际组织拿来‘意识’，二是找到一个可持续发展的减排机制。归根到底，尤努斯的‘穷人银行’不正是一个符合孟加拉国情的模式吗！”这位官员说。■



瞭望东方周刊



《瞭望东方周刊》记者殷呈悦/浙江杭州、山西高平、陕西西安报道

“减排”时代：先到者先得

信息技术革命首发地美国硅谷的许多中小IT企业，已经把增长点转向新能源和环保技术

全球环境基金（GEF）项目经理张老宏博士至今还记得，与韩志成同期的一位煤焦老板也曾在GEF筛选的资助项目之列，但2001年恰恰是国际市场上焦炭最火的一年，于是这位老板拒绝了“节能减排”项目，理由是“你知道我一年炼焦能挣多少钱吗”。

笑到最后的，是先抢一步的韩志成。

尽管大多数中国人对于诸如GHG（温室气体）、CDM（清洁发展机制）等环境术语还相当陌生，但事实上，“节能”和“减排”早已悄然走出了专业领域，也不再是环保主义者的口号、某些公司的化妆品，而成为与每一个商人甚至普通人切身利益息息相关的名词。

可以说，“环保秀场”时代已经结束，“减排经济”时代早已到来。把握住了先机的人和企业，自然就取得了优势地位。

“都不减排，未来就会被动”

2006年是中国有史以来气温最高的一年，也是长江水位最低的一年。进入2007年，最频繁出现在联合国新闻稿中的词就是“气候变化”。

联合国系统驻华协调代表兼联合国开发计划署驻华代表马和励（Khalid Malik）对《瞭望东方周刊》记者说：“思考和争论气候变化影响的时代已经结束了，我们已经进入了一个为后果‘埋单’的时代。”

而为了应对这个变化，“减少温室气体排放”（简称“减排”）已经经由《京都议定书》等国际公约形成了“所有国家按比例共同埋单”的机制。

目前，中国温室气体排放量仅次于美国之后列全球第二。中国国家环保总局副局长潘岳在今年2月接受媒体采访时承认，中国“减排”面临的压力非常大。

因为能源结构中煤炭占了85%，但"越不减排，未来就会越被动"。

《节能法》实施细则即将出台

中国政府承受的"减排"压力愈来愈大，关于企业——特别是污染较重的乡镇企业——"减排"的强制性法令和条文会陆续出台。

联合国开发计划署驻华代表处提供给本刊记者的数据表明：中国50%的污染源来自乡镇企业，而水泥、制砖、炼焦和铸造四个重污染行业就占到中国二氧化碳排放总量的1/6。

中国农业部"中国乡镇企业节能与温室气体减排"项目办副主任王桂玲告诉记者，《节能法》实施细则即将出台，今后，能耗标准超标的企业将被罚税，节能企业则将在税收上得到返还。

在污染较重的水泥行业，今后"水泥厂设计中如果没有利用余热发电的设计，就得不到审批"。这也就是说，不但国有和大型企业要"环保"，一般印象中"能耗是高的、水平是低的、污染是大的"的乡镇企业更是必须进入"减排时代"。

"减排"于企业而言是机遇

联合国开发计划署驻华代表处能源与环境处项目经理、发展经济学专家庸龙一郎（John Hirano）告诉记者，"减排"对于国家是一种义务，对于企业来说更可能是一种机遇。

为了说明这一点，他举了一个历史梳理：在近代，全球经历过两次特别重要的变革，第一次是工业革命，第二次是信息技术革命，而我们正在经历的，很可能就是第三次的环保和能源革命。

目前，信息技术革命的首发地美国硅谷的许多中小IT企业已经把增长点转向新能源和环保技术。2005年新晋的中国富豪中，就有不少正在从事的正是这个行业。

王桂玲也告诉本刊记者，把"节能"放于"减排"之前，是意味深长的：对于中小企业而言，"减排"压力更是一种运用新节能技术、降低成本的推动力。

在"中国乡镇企业节能与温室气体减排"项目中，位于浙江湖州的中德水泥公司利用水泥窑低温余热发电，现在的年发电能力已经达到2100万千瓦时，每年，估计可以从"减排"中获得1500万元的经济收益。

"这是一场先到者先得的商机，在这个变革的过程中，如同高耗能和中国水泥的中小企业很有可能是引领潮流的。"庸龙一郎说。■