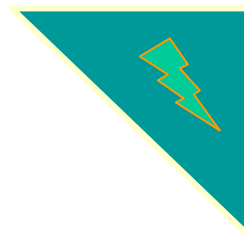
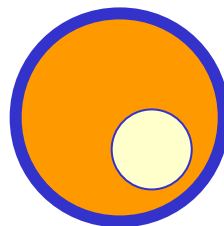




SYNERGY PROGRAMME

Training Programme on Energy Management and Energy Efficiency in the People's Republic of China and in Europe



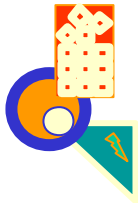
Summary of

FINAL REPORT

June, 2001



EDITORIAL



In 1999 the European Commission issued the terms of reference for a training programme on energy management and energy efficiency in the People's Republic of China and in Europe with energy savings in buildings as the main focus. Five training courses to several concerned topics, a study tour in Europe and a long term training for Chinese experts should be performed. CENTRIC AUSTRIA set up an international consortium of companies and organisations with vast experience in this field and was chosen as the training provider for this project through an EU wide competition.

Now, two years after our first letter of interest to the European Commission and almost 18 month after signing the contract of co-financing with the Commission, we can say that our engagement to bid for this project, was the right decision. The investment of expert-time and money - far more than the amount of co-financing by the European Commission - for a good performance of the training was a good investment, too. The achieved results of the project and experiences on both, European and Chinese side, should motivate to continue along these lines.

One says, when Europeans enter the first time China, it will be a suddenly feeling to like it or not. I myself count to the first party. From the first moment me and our experts got a warm reception by the Chinese partners. I am grateful to all the persons and organisations, who helped to make the project a full success.



In first instance my thanks go to more than 200 Chinese participants in the training activities, who have proofed that Chinese meet foreigners with distance sometimes a liar. The climate between Europeans and Chinese was always open minded and oriented to the common mission in the energy and environment area during the time. The five energy centers of [Chongqing](#), [Hangzhou](#), [Nanjing](#), [Shanghai](#) and [Tianjin](#) and their staff did a perfect organisation work. I am grateful to the heads of the Centers of this time, namely Mr. [Ni Deliang](#) and Mr. [Shen Yuedong](#) from Shanghai, Mr. [Huang Dongfeng](#) and [Xin Mingyi](#) from Hangzhou, Mr. [Zhu Huimin](#) and Mr. [Li Yuqi](#) from Nanjing, Mr. [Wang Huixia](#) and Mr. [Song Zhengpin](#) from Chongqing, Mr. [Yang Jincheng](#) and Mr. [Li Chunhua](#) from Tianjin.



The superior Chinese project management was presided by Mr. [Yin Jun](#) from the [Chinese Ministry of Science and Technology \(MoST\)](#), who has redeemed his promise to take any problem, if there are some, at any time without hesitation, and became a good friend. He was supported in his tasks by Mr. [Li Baoshan](#) from MoST with excellence, not only as the head of the Chinese delegation to the study tour in Europe. Mr. [Xie Ji](#) from the [Chinese State Commission of Economy and Trade \(SETC\)](#) demonstrated as a good partner of MoST and the Europeans that economy and environmental sound approaches are only the both sides of the same medal.

The rich programme provided by the EU contractor [CENTRIC AUSTRIA](#) was only possible because of the engagement of a great number of EU organisations, who



contributed with their experiences, know-how, personell and even financial resources. There were about hundred European experts involved in the project in the one ore the other way - as trainers in China, presentators during the study tour in Europe or accompanying the Chinese long term trainees during their in-depth studies in Europe.



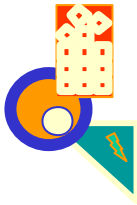
To mention some of them, I have to start with [Prof. Gerhard Faninger](#), who mainly gave his input and scientific advise in the most important phase of every project, in the beginning, and also as lecturer in Nanjing and Chongqing. In the later phases of the project the scientific supervision was done by Mr. [Kurt Schauer](#) from the [Stenum GmbH](#). He was a good hand for the project management to manage the logistics bringing the modular concept of the training programme to live, accompanying the Chinese delegation during the whole duration of the study tour, co-editing the textbook, co-organising the long term training part and participating in many meetings including the summary meeting in China. He and his colleague Mr. [Jan Sage](#) were also the first EU experts giving lectures in the training courses in China in Hangzhou and they layed a good basis for the oncoming courses.

The following training course in Tianjin saw the largest number of participants of all courses. About 70 Chinese experts were introduced to geothermal issues by Mr. [Günter Zweiner](#) from [WBG](#) and the [Joanneum Research](#) experts Mr. [Christian Schmid](#) and Mr. [Gunnar Domberger](#). The later was also the leading expert for one part of the study tour in Europe, which covered some site visits in Italy. Further his colleague Mr. [Pierpaolo Saccon](#) was about in Italy.

One of the most reknown companies in the area of future building design and HVAC systems is [HL-technik AG](#) from Germany. They did not hesitate to send four of their best experts to China giving lectures in the training course in Shanghai. On board were [Prof. Joachim Stoll](#), Mr. [Hans Joachim Kast](#), Mr. [Siegfried Schilling](#), who also opened the door to some of the most interesting site visits during the study tour in Berlin like the Willy Brandt Building. Particularilly grateful I am to the forth trainer for Shanghai, Mr. [Wolfgang Kessling](#). Some weeks later he also gave lectures during the training courses in Chongqing and Nanjing. Due to his vast know-how and his communication skills he developed to one of the major pillars of the project team. He also proposed the German part of the study tour.

The last two training courses in Chonging and Nanjing were conducted with parallel time schedules, which caused a just-in-time performance. I am grateful to all trainers of these two courses for their capability to stand the efforts including traveling between locations. Beside already mentioned trainers Mr. [Christian Kastner-Lanjus-Wellenberg](#) from [IC-Consulenten](#) and Mr. [Klaus Lutschounig](#) from [SETEC](#) were the new ones in the team.

The study tour in Europe required the engagement of dozens organisations and companies, who were ready to receipt the Chinese delegation and to present their sites, products and services. To do not double the detailed report of the study tour I express my thanks to all in one at this place.



But it has to be highlighted, that the project caused interest also on the political and institutional level. I am grateful to the [Social Democratic Party of Germany](#), the Environmental Councillor of Carinthia, Mr. [Herbert Schiller](#) and the Environmental Councillor of the City of Graz, Mr. [Peter Weinmeister](#), who gave receptions for the Chinese delegation during the study tour. At the end of the study tour Mr. [Karl Schmid](#) from the [Austrian Chamber of Commerce](#) opened a window for Chinese-European business relations during a reception in the Chamber's headquarter in Vienna. Beside others this reception was also shared by representatives of the [Austrian Ministry of Infrastructure, Innovation and Technology](#) and the [Ministry for Economic Affairs](#). This institutional interest was completed by the promise of the [Austrian Trade Commissions in Beijing and Shanghai](#) as well as the [Austrian Embassy in China](#) and the [Chinese Ministry of Technology and Science](#) to support further activities of the project partners in the future.



The final activity of the project was the long term training in Europe for at least 9 Chinese experts. It has to be highlighted that none of the European host organisations did invoice any fees for their training supply, quite verse the contributed to this activity from own financial resources to the project budget. On behalf of all Chinese beneficiaries and the project team I am grateful to the [City of Graz](#) and its institutions [Department of Environment](#), [Austrian Cleaner Production Center](#) and [Graz Energy Agency](#), to the [Austrian Energy Agency](#) in Vienna, to the [Folkecenter in Denmark](#), to the [Stadtwerke Graz](#), the [Joanneum Research](#), the energy utility [KELAG](#) and its subsidiary [WBG](#) and to the [Technical University of Berlin](#). These organisations and their staff have done a great work.

A project that bridges two different cultures and language areas depends a lot on the quality of interpretation. I am grateful to all [interpreters](#) that have done a perfect work on order of CENTRIC AUSTRIA. In particular I have to address my thanks to Mr. [Xin Mingyi](#), who was more than an interpreter during the study tour in Europe, but also an ambassador between the European and the Chinese side.



A project with that rich activities costs a lot. I am grateful to the European Commission for co-financing and for giving CENTRIC AUSTRIA the chance to execute such an interesting and future oriented project. In particular I address my thanks to the [SYNERGY Office](#) in Brussels to Mr. [Paschalis Papachristipoulos](#), Mr. [Lars Hyden](#), Mr. [Josep Casanovas](#) and Mrs. [Nadine van den Berghen](#). Further to the [EU Delegation in Beijing](#), Mrs. [Jolanda Jonkhart](#). Special thanks from Austria to Austria have to be addressed to the [Austrian Government](#), [Mrs. Heide Borns](#), who raised the necessary co-financing to balance the budget.

Last but not least I am grateful to my staff, in particular to Mrs. [Lydia Kampl](#) as the head of administrative staff for her perfect arrangements and heartfelt care for all of us, Europeans and Chinese, during the whole project.

Thank-you!

June 2001, St. Veit/Glan, Austria



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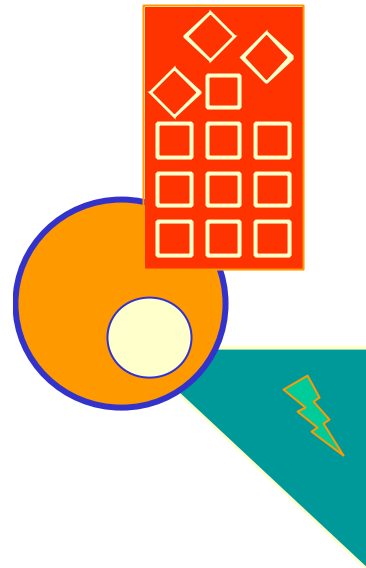


WORKING PROGRAMME

TRAINING SESSIONS IN CHINA

STUDY TOUR IN EUROPE

LONG TERM TRAINING IN EUROPE



Since 1982 training programmes in energy management and energy efficiency have been carried out in collaboration with the relevant authorities at five centres in China, under the central co-ordination of the now [Ministry of Science and Technology](#) (MoST), as well as the [State Economic and Trade Commission](#) (SETC).

Over 3000 Chinese engineers and managers, representing industry, government and regional organisations have attended these courses. The emphasis has been on the implementation of energy management and energy efficiency practices in the industrial and building sector. The later is expected to gain importance in 1999/2000.

The three components of the training programme:

- ?? [Training sessions at five centres in China](#) – Hangzhou, Nanjing, Shanghai, Tianjin and Chongqing.
- ?? [A study tour to selected EU countries](#) – Austria, Germany and Italy
- ?? [A long term training period in Europe](#) at EU energy companies, utilities, universities, research institutes, etc

The programme was supported by the [European Commission](#) within the framework of [SYNERGY](#) and the [Austrian Government](#). The executor of the programme was [SYNERGY CHINA – CENTRIC AUSTRIA](#), a consortium of well experienced professionals, scientists and practical experts, which was found out by an international competition.



ENERGY CONSERVATION

A Key Element for Sustainable Development

Energy resources are the key to economy. More than 85% of the energy carriers are from temporary limited resources: coal, oil, gas and nuclear energy by fission. Therefore the present world economy do not meet the goal of sustainability and has therefore no future prospects.

The energy consumption of today has a high potential to disturb the environment by greenhouse gases and toxic emissions. Therefore, it is necessary to change the energy economy also because of environmental protection.




























In the building sector about 45% of the world energy and about 40% of world material consumption is used, facts which need a solution for a long-term sustainable development.

International co-operation on energy research, development and demonstration in the framework of the research programmes of the International Energy Agency, IEA/OECD, and the European Community was focused in the last 20 years to the building sector with the goal to find ways for the realization of sustainable buildings: Based upon a life cycle analysis sustainable buildings are designed to minimize both direct and indirect adverse impacts on the indoor, local, regional and global environment. Sustainable buildings incorporate sustainable materials and components and use of a minimum amount of energy, which should be covered to a high percentage by renewable energy carriers. The core elements for sustainable buildings are high heat insulation of the building envelope as well as active and passive use of solar energy. Sustainable buildings have to be characterized by certification considering the terms for sustainable buildings. Therefore criteria for sustainable buildings were defined in international co-operation and analytical calculation models for the assessment are now available.

There is a general need for increased public awareness and understanding of sustainability, especially for the main players involved in planning decisions (planning officers, local communities, pressure groups, etc.). Greater consideration needs to be given to the potentially useful role that energy-efficient buildings and renewables could play in meeting these targets and of ways of encouraging their development and deployment. Encouragement needs to be given also to increase research in this area and to improved sharing of informations on this topic. Sustainable buildings should be attractive in design and function as well as cost-effective.



TIME TABLE

January 2000		?? Preparatory meetings in China (January 14 to 18, 2000), fixing training programme in final detail
February 2000		?? Preparatory meetings with European experts in Europe, detailed preparation of lectures
March 2000		?? Inception report to European Commission (March 6, 2000)
		?? Preparation of lectures to be continued
April 2000		?? Start with training course in Hangzhou (March 27, 2000)
		?? Training course in Hanzhou completed (April 2, 2000)
May 2000		?? Training course in Tianjin (April 10 - 15, 2000)
		?? Training course in Shanghai (April 10 - 16, 2000)
		?? Training course in Chongqing (May 16 - 22, 2000)
June 2000		?? Training course in Nanjing (May 17 - 23, 2000)
		?? Interim meeting of projectmanagers in Beijing (May 25, 2000)
July 2000		?? Preparation of the study tour: EU expert meeting to draft route (June 21, 2000)
		?? Project manager visited SYNERGY Office, Brussels (June 28)
August 2000		?? Final route planning of study tour in Europe, agreement with sites to be visited, detailed time schedule
		?? Invite tenders from travel agencies for the study tour
		?? Evaluation of offers, contract with travel agency
September 2000		?? Final list of Chinese participants in the study tour
		?? Invitation letters to Chinese participants
October 2000		?? Insurance and international travel for Chinese participants
		?? Interim report to European Commission (August 17, 2000)
November 2000		?? Performance of the study tour in Europe - covering Germany, Italy and Austria (September 16 to October 2, 2000)
		?? Report on Study Tour
December 2000		?? Thank-you-letter to involved companies in the study tour
		?? Final english version of the textbook submitted to China
January 2001		?? Start preparation of long term training in Europe: Selection of Chinese participants, Selection of European host organisations
February 2001		?? After agreement with European Commission, EU and Chinese project management decided to shift long term trainings in Europe to spring time, to respect European (Christmas) and Chinese (New Year festival) holidays.
March 2001		Time buffer
April 2001		?? Final meeting of EU and Chinese projectmanagement in China (February 12 - 16, 2001)
May 2001		?? Long term training in Europe
June 2001		?? Long term training in Europe
July 2001		?? Long term training in Europe
		?? Preparation of final report
		?? Submission of final report to European Commission

 Management tasks  Training sessions  Study tour  long term training



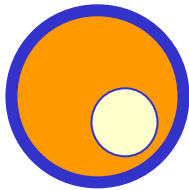
STATISTICS

TRAINING SESSIONS



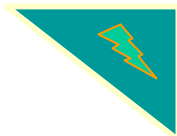
Number of training courses	5
Total number of Chinese participants	166
?? Hangzhou.....	30
?? Tianjin	58
?? Shanghai.....	29
?? Chongqing.....	22
?? Nanjing.....	27
Total number of European lecturers	13
Total number of distinct lessons	82

STUDY TOUR IN EUROPE



Number of sites visited	5
Number of EU member states covered.....	3
?? Austria, Germany, Italy	
Number of company contacts.....	00
Total number of Chinese participants	26
Total duration in days (including travelling)	18

LONG TERM TRAINING IN EUROPE



Number of Chinese long term trainees.....	9
Number of EU host organisations	12
Number of EU member states involved.....	4
?? Austria, Denmark, Germany, Greece	
Average duration of stays of long term trainees in EU.....	

MEETINGS AND REPORTS



Meetings of EU and Chinese project management	3
?? Preparatory, interim and final meetings in China	
Meetings of EU project manager with SYNERGY office	2
Reports	4
?? Inception, interim and final report, report of study tour	
Other outputs.....	3
?? Textbook in english and Chinese edition, Web site	