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UNIDO-Czechoslovakia Joint Programme  
for International Co-operation, Non-metallic Industries, Pilsen

TECHNICAL WORKSHOP ON ENERGY CONSERVATION  
IN BUILDING MATERIALS INDUSTRIES,  
IN PILSEN

(The fifth Subnetwork Group Meeting  
on Energy Conservation in Building Materials Industries)

F I N A L R E P O R T

Project No. DP/RER/83/003  
"Industrial Energy Conservation Network"  
Contract No. 89/146 LM

Pilsen, Czechoslovakia, 1 - 8 November 1989

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- I. List of Participants
- II. Organizing Committee
- III. Work Programme of the Meeting
- IV. List of Documentation and Requisites
- V. List of Lectures
- VI. Subnetwork Work Plan (1988 - 1990)

## I. INTRODUCTION

The Fifth Subnetwork Group Meeting on Energy Conservation in Building Materials Industry was to be organized in Cyprus originally, according to the Project DP/RER/003 Work Plan. Since some financial problems have occurred at the Cypriot organizers the decision was taken by UNIDO Vienna and by the Subnetwork Focal Point (SFP) to use the opportunity that UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen in cooperation with UNIDO Vienna organize a technical workshop "Energy Management in Non-metallic Industries" in Pilsen and to connect both the events in order to enable the participants from the Project countries and from many other developing countries to exchange information, experience, views and to develop new contacts.

## II. PARTICIPANTS

The Meeting combined with the Technical Workshop was attended by 30 foreign representatives, 13 of them from the Subnetwork:

- Bulgaria (1)
- Hungary (4)
- Poland (2)
- Romania (2)
- U.S.S.R. (3)
- Yugoslavia (1)

other from the following countries:

- Egypt (1)
- Ethiopia (1)
- Guinea-Bissau (1)
- India (3)

- Nigeria (1)
- People's Democratic Republic of Korea (3)
- Portugal (1)
- Tunisia (2)
- Vietnam (1)
- Yugoslavia (3).

The List of Participants is presented in Annex I.

### III. LANGUAGE

The programme was conducted in English and all materials were typed in English, too.

### IV. ORGANIZATION OF THE MEETING

The financial matters were arranged according to the agreement between UNIDO Vienna and UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen.

Organization of the Meeting was ensured by the Organizing Committee presented in Annex II.

The Work Programme of the Meeting is presented in Annex III.

Various documentation and requisities were handed over to each participant as it is listed in Annex IV.

The participants enriched their scope of experience within the discussions with the officials presented in Annex II (Organizing Committee) and with other ones as follows:

- Messrs. J. Procházka, Z. Voráček, M. Fiala, M. Hajský  
(Research Institute for Ceramics, Refractories and Non-metallic Raw Materials, Pilsen)

- Mr. Z. Pácal (Czech Geological Survey, Prague)
- Mr. J. Chvátal (Ceramic Works at Chlumčany, Director)
- Mr. F. Plecháč (State Energy Authority, Pilsen)
- Mr. P. Navrátil (PS Machinery, Píerov)
- Mr. P. Hostinský (Lord Mayor of the city of Pilsen).

## V. CONCLUSIONS AND RECOMMENDATIONS

1. All the outlined aims of the Subnetwork Group Meeting and the Technical Workshop were successfully fulfilled. The participants appreciated the simultaneous organization both for ENCONET countries and developing countries, which brought about an excellent opportunity to exchange information and experience and to maintain new professional contacts. The participants recommend to UNIDO to organize such joint interregional sessions in the future, too.
2. The Energy Management Programme which was developed for silicate industries in the UNIDO-Czechoslovakia Joint Programme and the Research Institute in Pilsen is an effective tool for energy conservation. Utilization of mobile energy auditing means (a mobile diagnostic unit or a portable energy auditing kit) is a substantial part of the Programme.
3. Energy management and conservation in industry helps to improve energy balance of economies of all countries. International and inter-regional co-operation and technical assistance to promote the application of energy management in developing countries is desirable. The Energy Management Programme developed in Pilsen have already proved its efficiency in many countries. The facilities are available in the Joint Programme and the Research Institute in Pilsen for training, consultations, advisory missions and energy auditing executions, to be utilized by developing countries. The assistance of the Joint Programme Pilsen will be asked for officially by some of the participating countries, such as Ethiopia, Portugal, Vietnam and others.

4. The participants in the Meeting recommend to complete the energy auditing activities aiming at energy conservation and technological optimization with environmental pollution monitoring.
5. UNIDO is requested to seek a possibility for a transfer of energy auditing software available in the Subnetwork Focal Point (SFP) in Pilsen to the participating parties interested in.
6. The participants appreciated training video programmes prepared by the Joint Programme Pilsen and presented within the Workshop. They request the INTIB, UNIDO Vienna and the Joint Programme Pilsen kindly investigate possibility for the supply of copies for local national training centres.
7. Chief Executive of the Joint Programme Pilsen explained to all participants that project formulation procedure is a very important and responsible matter. Objectives, needs and aims must be known and clearly formulated. For more complicated projects it is possible and recommended to ask for a preparatory assistance of UNDP by inviting the Joint Programme Pilsen (or other) experts for the formulation of projects (preparatory assistance mission).
8. The UNIDO Special Industrial Services (SIS) mission can be requested for in the case of troubleshooting and urgent assistance through appropriate SIDFA (Senior Industrial Development Field Adviser) at local UNDP office. This assistance is available both for governmental and private organizations under the condition of a relevant governmental approval.
9. The Subnetwork activities are aiming at the aims outlined in the Work Plan and in the Project Revision Document. There is no need to change the Subnetwork Work Plan which was approved by the 4th SGM in 1988 for the period by the end of 1990. The forthcoming activities should cover mainly the following:

- elaboration of guidelines on sectoral technical strategy
- compilation of a sectoral energy auditing manual covering specific sectoral technologies and technical systems
- development of computerized information system
- selection of a reference plant with computer aided energy management
- co-ordination of research and development
- operation of the subnetwork training centre for energy auditing/management in building materials industry (in Pilsen).

10. The participants appreciate the work which has been already done in Pilsen in the field of computerized information system. All the Subnetwork Points should supply as soon as possible the data mainly as follows:

- description of energy efficient technologies and/or devices
- energy saving potentials (mainly for typical products of the Subnetwork, i.e. cement, red bricks, wall tiles)
- information on applied research and development activities and results
- training opportunities
- consultancy available
- other data upon the request of the SFP.

On the other hand the Subnetwork Points supplying their data will be provided with hard copies of all the information available in the Subnetwork database in Pilsen.

11. The participants ask the Hungarian Subnetwork Point to consider the possibility to organize kindly the next SGM (preliminarily in September 1990) including a seminar on expert systems in building materials industry and in-plant training in a reference plant with computer aided energy management. Such computerized systems of a direct management should be the next aim of industrialized countries after utilization of the possibilities given by the mobile diagnostic means. Hungarian Subnetwork Point will



inform the SFP about organization of the SGM by the end of February 1990.

12. The Subnetwork Work Plan for the period 1988 - 1990 is enclosed as Annex VI to this Report. The Subnetwork Points are requested to send to the SFP in Pilsen by 25 November 1989 the proposals on their contributions to the Work Plan aims fulfilment, on possibilities of marketing of the Subnetwork activities and results and any other proposals on further co-operation, to enable the SFP to present a compact Subnetwork Report in the Network Steering Committee Meeting, which will be held from 11th through 15th December 1989 in Vienna.
  
13. Valuable Country Reports were presented by the participants in the Workshop, as they are mentioned in Annex V. Some of them, which were delivered in a typed form, were distributed among the participants and their abstracts will be included into the information database of the INTIB Node at the UNIDO-Czechoslovakia Joint Programm, Pilsen

## VI. EVALUATION BY THE PARTICIPANTS

The Technical Workshop on Energy Management in Non-metallic Industries offered the opportunity for the participants of 15 countries to share their experience and views together with Czechoslovak experts and to upgrade their knowledge in the field of energy management in building materials industry. This topic involved not only a sphere of energy auditing, possibilities of energy savings and conservation but also important problems in brick, cement and ceramic technologies and factors in economy linked to the energy as well as ecological impacts and possible solutions.

The contribution of Czechoslovak industries in this programme was very significant. The participants appreciated a high standard of research done in the sector of energy management and were able to recognize a practical exploitation of knowledge in ceramic industry. They discussed in institutions visited the problems related to their concern and home practice. The participants, acknowledged that the information gained during visits, lectures, practical in-plant training and round-table discussions will help them in their further activities in their home countries.

Following visits to the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen, to the Research Institute for Ceramics, Refractories and Non-metallic Raw Materials and ceramic plants and on the basis of fruitful discussions the participants expressed their wish to co-operate closer with the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen in the future in the field of training, testing and evaluation of their indigenous non-metallic raw materials, energy auditing and management, further in assistance in establishing energy conservation programmes and centres in their home countries. They also desired to obtain published papers and technical information through the INTIB node Pilsen. All participants were also supplied with technical literature of the Joint Programme according to their special wish.

The participants in the workshop presented also some individual requests and recommendations related to the need of their respective countries.

The participants expressed their gratitude to UNIDO and the Joint Programme, Pilsen for arranging this workshop in Czechoslovakia where the authorities are very generous in sharing their knowledge and experience. They appreciated responsibility extended by the organizers of the Workshop.

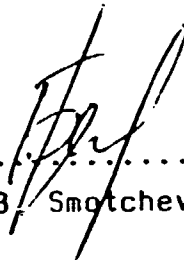
They were thankful to Dr. A. Lošťák, guarant of the Joint Programme, Pilsen and Director of the Workshop for his active part in the Programme.

They greatly appreciated the role of Mr. Z. A. Engelthaler, Director of the Research Institute for Ceramics, Refractories and Non-metallic Raw Materials and Chief Executive of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen for well prepared programme and his personal involvement in various activities. They further appreciated his part in the round-table discussions.


The participants expressed their gratitude to Mrs. E. Engelthalerová, Chief of Administration and to the other staff members of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen who were always helpful and contributed to the success of the workshop.

The Final Report on the Fifth Subnetwork Group Meeting on Energy Conservation in Building Materials Industry was negotiated and agreed on by the following representatives of the Subnetwork institutions:

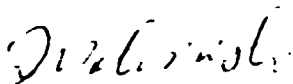
On behalf of Bulgarian delegation:

  
.....  
Mr. B. Smotchevsky

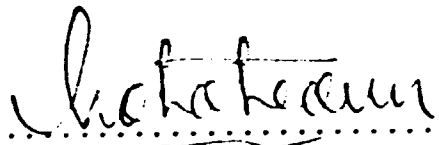
On behalf of Hungarian delegation:

  
.....  
Mr. M. Hilger

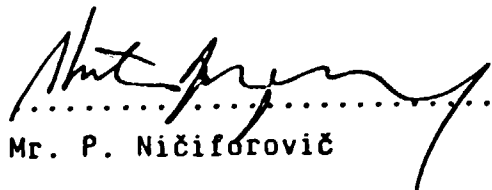
On behalf of Polish delegation

  
.....  
Mr. Z. Polesinski

On behalf of Romanian delegation:

  
.....  
Mr. S. Motateanu

On behalf of Yugoslav delegation:

  
.....  
Mr. P. Ničiforovič

On behalf of Czechoslovak delegation:

  
.....  
Mr. Z.A. Engelthaler

Pilsen, Czechoslovakia  
8th November 1989

LIST OF PARTICIPANTS IN THE SUBNETWORK GROUP MEETING

- 1) Mr. Bojidar SMOTCHEVSKY  
BULGARIA  
Designer, Scientific and Technological Institute "Promishlena Energetica", Sofia
- 2) Mr. Dénes BULKAI  
HUNGARY  
Energy Efficiency Officer, World Bank Co-ordination Office and Energy Efficiency Office, Budapest
- 3) Mr. István DOBA  
HUNGARY  
Expert, World Bank Co-ordination Office and Energy Efficiency Office, Budapest
- 4) Mr. Kristóf DOMSZKY  
HUNGARY  
Director, Energy Engineering Research and Development Service, Ltd., Budapest
- 5) Mr. Miklós HILGER  
HUNGARY  
Senior Research Officer, Central Research and Design Institute for Silicate Industry (SZIKKTI), Budapest
- 6) Mr. Maciej BRONIAREK  
POLAND  
Chief Specialist, Ministry of Development and Implementation, Warsaw
- 7) Mr. Zbigniew POLESINSKI  
POLAND  
Director, Institute of glass and Ceramics, Warsaw

8) Mr. Mircea LIPSA

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Consulting Engineer, Ministry of Wood Industry and Building  
Materials, Bucharest

9) Mr. Sergiu MOTATEANU

ROMANIA

Inspector General, Ministry of Wood Industry and Building  
Materials, Bucharest

10) Mr. Alexander V. KLIMENKO

USSR

Head of Scientific Research Division, Moscow Power Engineering  
Institute, Moscow

11) Mr. Alexei I. PERELETOV

USSR

Senior Research Officer, Moscow Power Engineering Institute,  
Moscow

12) Mr. Anatoli G. VAKULKO

USSR

Head of Laboratory Dpt., Moscow Power Engineering Institute,  
Moscow

13) Mr. Petar NIČIFOROVIČ

YUGOSLAVIA

Adviser, Testing Materials Institute, Belgrade

LIST OF PARTICIPANTS IN THE WORKSHOP

1) Mr. El Sayed HUSSEIN Mohamed Husein

EGYPT

Manager of Kilns and Utilities Department  
The General Company for Ceramic and Porcelain Products  
P. O. Box Ramses, Cairo

Specialization: operation and maintenance of kilns, power stations,  
gas mixing stations, boilers and air equipment

2) Mr. Befekadu BALCHA

ETHIOPIA

Head of Mineral Exploration Department  
Ethiopian Institute of Geological Survey  
P. O. Box 2302, Addis Ababa

Specialization: exploration of less energy consuming non-metallic  
raw materials and communal supply of energy source to replace wood

3) Mr. Alberto DA SILVA

Head of the Project on Energy Planning  
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Apartado 6, 1021 Bissau Codex

GUINEA BISSAU

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electric energy

4) Mr. Nirmal John GAINNEOS

INDIA

Deputy Manager  
Bharat Heavy Electricals Ltd.  
Electroporcelains Division  
P. B. 1245, Bangalore 560012

Specialization: modern firing methods and energy savings

5) Mr. Avinash Uddhav PATIL

INDIA

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Bharat Heavy Electricals Ltd.  
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P. B. 1245, Bangalore 560012

Specialization: electrical energy conservation in ceramics plants,  
electrical projects and maintenance of electrical  
equipment

6) Mr. Ramuhally Prabhakar TRIVIKRAM

INDIA

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Mysore Stoneware Pipes and Potteries Ltd.  
No. 80, VI. cross., Gandhinagar, Bangalore 560009

Specialization: planning of expansion and diversification of the company, design of modern kilns for ceramic industry (stoneware pipes)

7) Mr. Ri SON-TEK

Senior Research Officer  
Pchongyang Optical Research Institute  
Pchongyang

Specialization: optical system designer; energy management in glass industry

8) Mr. Ho YONG-SAM

Research Officer  
Pchongyang Glass Factory  
Pchongyang

Specialization: energy management in glass industry

9) Mr. Zo SONG-DU

Research Officer  
Pchongyang Glass Factory  
Pchongyang

Specialization: energy management in glass industry

10. Mr. G. Olufemi A. LADITAN

NIGERIA

Consultancy Director  
INSER, ICD, II. Fofa Abayomi Rd.  
Victoria Island, Lagos

Specialization: industrial metallurgy, natural gas-based industries, classification of clays

11. Mr. Artur Manuel SERRANO

PORTUGAL

Head of the Energy Department  
Technological Centre for Ceramics and Glass - C. T. C. V.  
R. Coronel Utiga Simao  
3000 Coimbra



Specialization: heat transfer and dynamic fluids and energy auditing

12) Ms. Dalila AMMAR

TUNISIA

Chief of the Service Department for Rational Use of Energy  
8 Rue Ibn Elyazar, 1002 Tunis

Specialization: energy management in industrial sector

13) Mr. Dhaouadi JALEL

TUNISIA

Energy Auditing Expert  
Technical Centre for Building Materials, Ceramics and Glass  
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14) Mr. Minh Quan VU

VIETNAM

Head of Geochemistry Laboratory  
Centre for Geological Research of Sea  
National Centre for Scientific Research  
Nghiado, Tuliem, Hanoi

Specialization: geochemistry and energy management

15) Mr. Konstantin HADŽI-RISTIĆ

YUGOSLAVIA

Senior Research Officer  
Institute for Construction Materials, Ceramics and Non-metallic  
Minerals  
75000 Tuzla

Specialization: energy management, electrical energy conservation

16) Mr. Hrustem SMAILHODŽIĆ

YUGOSLAVIA

Head of the Research Department  
Institute for Construction Materials, Ceramics and Non-metallic  
Minerals  
75000 Tuzla

Specialization: energy management in building and ceramic material  
for thermal insulations

17) Mr. Milenko MARIČIĆ

YUGOSLAVIA

Senior Research Officer  
Research Institute of Materials  
Bul. Vejvode Mišica 43, Beograd

Specialization: production of ceramics/refractories, ferrites,  
clay bricks/, design of ceramic factories

**ORGANIZING COMMITTEE**

Director of the Technical Workshop

Mr. A. Lošťák, Member of the Advisory Board of the Minister of Construction and Member of the UNIDO-ČSSR Joint Committee

Programme Director

Mr. Z. A. Engelthaler, Chief Executive of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries Pilsen and Director of the Research Institute for Ceramics, Refractories and Non-metallic Raw Materials, Pilsen

UNIDO Vienna Representatives

Mr. N. G. Biering, Industrial Development Officer and Liaison Officer of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen

Mr. A.I. Makovets, Industrial Development Officer, Project Back-stopping Officer

Ms. S.H. Yalgindag, Industrial Development Officer

Technical Secretary

Mr. P. Duchek

Co-operators

Mr. O. Řehořovský, Mr. S. Hora, Mr. V. Nový

General Rapporteurs

Mr. M. Nový, Mr. F. Pecháček

Organization and Financing

Mrs. E. Engelthalerová

Administration

Mrs. A. Hrušková, Mrs. M. Horáčková, Mrs. J. Stanzlová

Passport Arrangements

Mrs. I. Hlaváčová

INTIB node

Mr. J. Žaloudek, Mr. M. Jarausch

The Fifth Subnetwork Group Meeting on Energy Conservation in Building Materials Industry  
and  
Technical Workshop on Energy Management in Non-metallic Industries

W O R K P R O G R A M M E

(Pilsen, Czechoslovakia, 1-8 November 1989)

Monday 30/10	Arrivals of participants, accommodation	URAL hotel, Pilsen
Tuesday 31/10	Arrivals of participants, accommodation	URAL hotel, Pilsen
19.00	Dinner	

Wednesday 1/11

8.00	Breakfast	URAL hotel, Restaurant
9.00	Registration of participants	URAL hotel Družba Room
10.40	Welcoming of guests and participants by Mr. Z. A. Engelthaler, Chief Executive of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen and Director of the Research Institute for Ceramics, Refractories and Non-metallic Raw Materials in Pilsen	
10.45	Official opening by Mr. A. Lošťák, Director of the Workshop	URAL hotel Družba Room
11.15	Election of the board of participants and adoption of time schedule and work programme Organizational matters	URAL hotel Družba Room
12.00	Official lunch given by Mr. A. Lošťák Greeting of official guests	URAL hotel Restaurant

14.00	1 <sup>st</sup> lecture and floor discussion: Energy Management in Czechoslovak Ceramic Works Mr. A. Lošťák	URAL hotel Družba Room
15.45	Break (Coffee - time)	
16.00	2 <sup>nd</sup> lecture and floor discussion: Technological Aspects of Energy Conservation in Non-metallic Industries Mr. Z. A. Engelthaler	URAL hotel Družba Room
17.45	Round-table discussion	
19.00	Dinner	URAL hotel Restaurant

Thursday 2/11

7.30	Breakfast	URAL hotel Restaurant
8.30	3 <sup>rd</sup> lecture and floor discussion: Role of Non-metallics in Industrial Development Mr. J. Müller	Continental hotel Družba Room
10.00	Break (Coffee - time)	
10.15	4 <sup>th</sup> lecture and floor discussion: Energy Auditing in Production Plants Mr. M. Nový	Continental hotel Družba Room
12.00	Break for lunch	Continental hotel Restaurant
13.45	Visit to Municipality of Pilsen Reception by the Major of Pilsen	Town Hall Pilsen
15.30	5 <sup>th</sup> lecture and floor discussion: Energy Saving Opportunities in Production of Building Materials Mr. P. Duchek	Continental hotel Družba Room



17.15	Break (Coffee - time)	Continental hotel Družba Room
17.30	Round - table discussion	
19.00	Dinner	URAL hotel Restaurant

Friday 3/11

7.00	Breakfast	URAL hotel Restaurant
8.45	In-plant training: Research Institute for Ceramics, Refractories and Non-metallic Raw Materials, Pilsen - Division at Horní Bříza  Demonstration of the Mobile Diagnostic Unit (Energy Bus)	Research Institute Horní Bříza
12.30	Break for lunch	West Bohemian Ceramic Works Horní Bříza
14.30	In-plant training - continuation	Research Institute, Horní Bříza
16.00	Round-table discussion	Research Institute Horní Bříza
17.00	Departure for Pilsen (by bus)	
19.00	Dinner	URAL hotel Restaurant

Saturday 4/11

7.30	Breakfast	URAL hotel Restaurant
8.30	UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen:  Technical Assistance to Developing Countries (presentation of training video and audiovisual programmes)	Continental hotel Družba Room
10.00	Break (Coffee-time)	
11.00	Round - table discussion	Continental hotel Družba Room
12.00	Break for lunch	Continental hotel Restaurant
14.00	Presentation of country reports  Round - table discussion	Continental hotel Družba Room
19.00	Dinner	URAL hotel Restaurant

Sunday 5/11

7.00	Breakfast	URAL hotel Restaurant
8.30	Departure for Prague (by bus)	
10.30	Practical training: Application of non-metallics in architecture	
12.30	Break for lunch	Restaurant Praha Expo 58
14.00	Sightseeing to Prague	
17.00	Departure for Pilsen (by bus)	
19.00	Dinner	URAL hotel Restaurant

Monday 6/11

7.30	Breakfast	URAL hotel Restaurant
8.30	6 <sup>th</sup> lecture and floor discussion: Advanced Ceramics for Energy Conservation Mr. F. Pecháček	Continental hotel Družba Room
10.00	Break (Coffee-time)	
10.15	7 <sup>th</sup> lecture and floor discussion: Demonstration of Energy Auditing Portable Kit Mr. V. Nový	Continental hotel Družba Room
12.30	In-plant training: Waste Heat Utilization in Food Processing Industry Excursion to Pilsen brewery	Pilsen brewery
14.00	Break for lunch	Restaurant Prazdroj
15.30	Presentation of country reports Round - table discussion	Joint Programme
19.00	Dinner	URAL hotel Restaurant

Tuesday 7/11

7.00	Breakfast	URAL hotel Restaurant
8.00	Departure for Chlumčany (by bus)	
8.45	In-plant training: Ceramic Works Chlumčany: Practical Application of the Mobile Diagnostic Unit in Industrial Plant	Ceramic Works Chlumčany
11.00	Round - table discussion	Ceramic Works Chlumčany
12.00	Break for lunch	Ceramic Works Chlumčany
13.00	Departure for Pilsen (by bus)	
14.00	Discussion of the Subnetwork activities and results, elaboration of the Work Plan for 1990 Preparation of the Draft Final Report	Research Institute Pilsen
19.00	Dinner	Restaurant Zlatý pohár

Wednesday 8/11

7.30	Breakfast	URAL hotel Restaurant
9.00	Evaluation of the Workshop Discussion of the Draft Final Report Approval of Final Report	Cotinental hotel Družba Room
12.15	Break for lunch	URAL hotel
11.00	Official Closing of the Workshop	URAL hotel Družba Room
18.00	Cocktail and official dinner given by Mr. A. Lošťák, Director of the Workshop Cultural Programme	URAL hotel Restaurant

Thursday 9/11

7.00	Breakfast	URAL hotel Restaurant
8.00	Departure of participants for Prague (by coach)	

**LIST OF DOCUMENTATION AND REQUISITES**

handed over to each participant of the Technical Workshop

Technical Workshop Schedule

Complete set of 7 lectures

Bulletins and Booklets of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen

Publication and folder on the Research Institute for Ceramics, Refractories and Non-metallic Raw Materials, Pilsen

Technical leaflets and Cumulative List of the UNIDO-Czechoslovakia Joint Programme publications

Multilingual vocabulary for ceramic industry and non-metallic raw materials

English-Czech Practical Handbook

Writing material and handbag, protective helmet

Conclusions and Recommendations of the Regional Workshop on Energy Conservation in Industry for African countries (held in Cairo, 1-5 October 1989)

Lecture "Industrial Energy Management (Main Issues)"  
by Mr. Z. A. Engelthaler for the Workshop in Cairo)

List of training videoprogrammes of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen



Country Reports delivered by the participants in the Workshop

Publications of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries,  
Pilsen (according to the requests of the participants in the Workshop)

Project Development (Main Guidelines)

LIST OF LECTURES

- 1) Mr. A. Lošťák Energy Management in Czechoslovak Ceramic Works
- 2) Mr. Z.A. Engelthaler: Technological Aspects of Energy Conservation in Non-metallic Industries
- 3) Mr. J. Müller: Role of Non-metallics in Industrial Development
- 4) Mr. M. Nový: Energy Auditing in Production Plants
- 5) Mr. P. Duchek: Energy Saving Opportunities in Production of Building Materials
- 6) Mr. F. Pecháček: Advanced Ceramics for Energy Conservation
- 7) Mr. V. Nový: Energy Auditing Portable Kit
- 8) Mr. Z.A. Engelthaler: Presentation of the UNIDO-Czechoslovakia Joint Programme, Non-metallic Industries, Pilsen
- 9) Mr. F. Plecháč: Activities of the Czech State Energy Authority
- 10) Mr. P. Navrátil: Production of the Píerov - Machinery for Building Materials Industry
- 11) Mr. P. Ničiforovič (Yugoslavia) A Look on Energy Management in Building Materials Industry and Environmental Protection

- 12) Messrs. H. Smailhodžić, The Preliminary Possibilities of Saving  
A. Ibrahimagić the Heat Energy in the Factory for Ce-  
S. Beslagic ceramic Tiles  
(Yugoslavia)
- 13) Messrs. S. Motateanu The Usage of Fuels in the Building Ma-  
M. Lipsa terials Industry in Romania  
(Romania)

Country Reports of:

- Egypt
- Ethiopia
- Guinea-Bissau
- Hungary
- India (2x)
- Nigeria
- Portugal
- Tunisia (2x)
- Vietnam

## Industrial Energy Conservation Network

1. Activities	2. Date or time period 3. Place 4. Host institutions 5. Particip. institutions	6. Inputs made by participants	7. Outputs expected	8. Financial arrangements
1. Elaboration of detailed action plan for the Subnetwork	March-May, 1988 SFP is responsible by correspondence with SPs	SPs proposals for division of work and responsibilities	- draft report of action plan, - split of technologies among countries, - list of responsibilities	costs are covered by national contributions
2. Organizing the 4th Subnetwork Group Meeting	October 1988 Czech, Cyprus or Hungary with co-operation of SFP, all SPs	provision for development of expert systems of processes in clay materials industries	elaborated proposals for: - expert systems development, - training capacity building	costs are covered by national contributions and by project fund
3. Establishing the Subnetwork information system, info channeling system with NS /INECA system/	October, 1988 - March 1989 organized by SFP with participation of all SPs	input of SPs: - data collection on analysed technologies in the country - computerized data processing, if necessary	- contact points /person, institution/ in all Network country for info system development - easy access to collected data at Subnetwork level	costs are covered by national contributions, hardware parts from the project funds
4. Releasing news on events, achievements, actions within the Subnetwork	Throughout 1989-90, SFP and information contact points in the countries are responsible	- continuous provision of information about activity in the Network country - editing and publishing by NS	widespread info available for any interested party /institution to develop co-operation within the Network or outside Network <u>Output 2.-4.3</u>	costs are covered by national contribution and by UNIDO in form of NS contribution /printing copying mailing costs etc.

## Industrial Energy Conservation Network

1. Activities	2. Date or time period 3. Place 4. Host institutions 5. Particip. institutions	6. Inputs made by participants	7. Outputs expected	8. Financial arrangements
5. Study tour to an industrialized country outside the project area	April or October 1989	SPs delegate participants	<ul style="list-style-type: none"> <li>- studying expert systems and technological improvements</li> <li>- report on conservation potentials on a comparative basis</li> </ul>	USA covered by project fund, airfares by national contribution
6. Establishing Sectoral Training Centre for Energy Auditing and Management	Febr.-June 1989 CSSR/Pilsen Sectoral Focal Point	-methods of energy auditing and management	<ul style="list-style-type: none"> <li>- hardware/software facilities to demonstrate application of improved energy management</li> <li>- programmes for training courses</li> <li>- continuous development of expertise for consultancy</li> </ul>	software and software development related costs are covered by national contributions, some hardware elements should be covered by project fund
7. Workshop on Computerized Aided Systems Design of Energy Management	Hungarian SP (preliminary, September 1990)	<ul style="list-style-type: none"> <li>-methods for computerized energy management systems,</li> <li>-factory level expert systems for the reference plant of the Training Centre</li> <li>-site preparation by Hungarian SP</li> </ul>	<ul style="list-style-type: none"> <li>- programmes for training courses</li> <li>- continuous development of expertise for consultancy</li> </ul>	Output 2.-4.4
8. Establishing Info system about R and D activity among the project countries to prevent duplicity	Sept. 1989-end 1990 organized by SFP with participation of all SPs	SFP input: information service about applied R. and D. activities in Network countries based on info system	<ul style="list-style-type: none"> <li>- co-ordination of inter-country R. and D. on topics:</li> <li>-- expert systems development,</li> <li>-- technology research and development for energy conservation</li> </ul>	costs should be covered by fees paid by R. and D. participants, special fund should be generated for R. and D. market services
9. Organizing the 5th sub-network Group Meeting	Sept.-Oct., 1989. site and host agency is to be determined on basis of rotation, all SPs participate	SP's input: - draft report on activities, - result of study tour/s/ for the countries for improvement	<ul style="list-style-type: none"> <li>- draft content of the Handbook involving experiences gained by the Study Tour/s/</li> <li>- schedule for workshops/training courses at Training Centre</li> </ul>	costs are covered by national contributions, UNIDO's participation covered by project budget
10. Elaboration of manual on sectoral	November-1989 June 1990		<ul style="list-style-type: none"> <li>- compiling roster</li> </ul>	

## Industrial Energy Conservation Network

1. Activities	2. Date or time period 3. Place 4. Host institutions 5. Particip. institutions	6. Inputs made by participants	7. Outputs expected	8. Financial arrangements
11. Elaborating a Network level Case Study: "Methods for Energy Management in Building Materials Industries"	Febr-June, 1990 SFP and Training Centres are responsible with participation of all SFPs	- Training Centre experiences, - description of expert systems developed, - recommendations on: -- improved energy management -- technological improvements	May, 1990: publication of the case study in form of a Handbook illustrating technical /management/ institutional energy conservation potentials in the Sub-network <u>Output 2-4.1</u> <u>Output 2-4.2</u>	costs mainly are covered by national contribution, publication will be supported by project fund
12. Workshop, training courses at the Training Centre for Network/non-Network countries.	Throughout 1990 at Training Centre with participation of all interested SFPs and DCs	- elaborated elements of the expert systems for selected technologies made by SFPs: - ball mills, insulation etc., - simulation, optimization, process control in cement industry	- development expert systems, - elaborated training programs, - disseminated ideas on Energy Management - trained trainers - trained experts within and outside of Network countries	costs of participation on courses are covered by national contributions other costs /e.g. courses for non-Network countries/ partly by project fund
13. Organizing the 6th Subnetwork Group Meeting	Sept.-Oct. 1990 site and host agency is to be determined on basis of rotation, all SFPs participate (preliminary Hungary)	- evaluation of past activity - recommendation for the future self-sustained operation	- buyers guide on expert systems developed, and on the consulting capacity of the Subnetwork	costs are covered by national contributions and by project fund