

## 別添資料

1. 討議議事録（ミニッツ）

2. 評価ヒアリング記録

3. 機材投入表（本邦調達分、現地調達分）

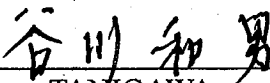
MINUTES OF MEETINGS  
BETWEEN THE JAPANESE MID-TERM EVALUATION TEAM AND  
THE COLLEGE OF DUNAUJVAROS ON JAPANESE TECHNICAL  
COOPERATION FOR THE MINI-PROJECT IN HUMAN RESOURCES  
DEVELOPMENT FOR ENVIRONMENTAL ENGINEERS AT THE COLLEGE OF  
DUNAUJVAROS IN THE REPUBLIC OF HUNGARY

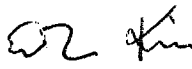
The Japanese Mid-term Evaluation Team of Japan International Cooperation Agency (JICA) (hereinafter referred to as "the Japanese Team"), headed by Mr. Kazuo TANIGAWA, Special Technical Advisor of JICA, visited the Republic of Hungary from January 15 to 22, 2003, in order to conduct mid-term evaluation of the Mini-Project for Human Resources Development for Environmental Engineers at the College of Dunaujvaros in the Republic of Hungary (hereinafter referred to as "the Project").

For this purpose, the Japanese Team and the authorities concerned of the Republic of Hungary had a series of discussions and exchanged views on the progress and outputs of the Project as of January 2003, and future plan of operation based on the Project Design Matrix (hereinafter referred to as "the PDM").

As a result of the discussions, both sides agreed to the matters referred to in the documents attached hereto.

Dunaujvaros, January 22, 2003

  
\_\_\_\_\_  
Mr. Kazuo TANIGAWA  
Head  
Japanese Mid-term Evaluation Team  
Japan International Cooperation Agency  
(JICA)

  
\_\_\_\_\_  
Dr. Endre KISS  
Director General  
College of Dunaujvaros  
Republic of Hungary

## ATTACHED DOCUMENT

### 1. Introduction

#### 1-1. Objectives of Mid-term Evaluation

- 1-1-1. To evaluate one-year activities of the Project from the viewpoint of the 5 criteria (relevance, effectiveness, efficiency, impact and sustainability), by identifying the degree of achievement of the expected outputs and project purpose as of January 2003;
- 1-1-2. To discuss input plan of the Project in 2003, based on the result of the evaluation by 5 criteria, for successfully achieving the project purpose at the end of 2004;
- 1-1-3. To revise PDM for clarifying project logical framework so that all concerned persons have a common image of the project outline and activities required for the rest of the period, thus facilitating efficient management of the Project.

#### 1-2. Methodology of Evaluation

##### 1-2-1. Means of evaluation

The evaluation was conducted jointly by the Japanese Evaluation Team and the authorities concerned of the Republic of Hungary. The Japanese Team conducted surveys at the project site, analyzed the results and had series of discussions with the Hungarian authorities concerned. The processes of evaluation are as follows:

- (1) Examination of related documents (Minutes of Meetings 2001, the experts' quarterly reports, etc.),
- (2) Questionnaire survey and interviews with counterpart personnel and other persons engaged in the project activities,
- (3) Discussion on the results of evaluation, future plan of operation and the revision of the original PDM (hereinafter referred to as "PDM 0") between both sides at the Steering Committee of the Project, which was set up in March 2002.

##### 1-2-2. Criteria for evaluation

The evaluation result was analyzed and summarized in terms of the 5 criteria (relevance, effectiveness, efficiency, impact and sustainability), described below.

##### a) Relevance

Relevance refers to whether the overall goal and project purpose are still in accordance with the development policy of the Republic of Hungary as well as the needs of target groups (beneficiaries).

**b) Effectiveness**

Effectiveness refers to the extent to which the project purpose has been achieved or is expected to be achieved as planned, and examines if the achievement has been brought about as a result of the outputs produced by the project inputs and activities (not of external factors).

**c) Efficiency**

Efficiency refers to the productivity of the Project, examining how efficiently the project inputs and activities have been converted into the output.

**d) Impact**

Impact refers to intended or unintended, direct or indirect, positive or negative influences caused by implementation of the Project. This includes the extent to which the overall goal has been attained.

**e) Sustainability**

Sustainability refers to probability whether or not the project outputs are likely to be maintained or further developed after the termination of the project period.

**1-3.Members of the Evaluation Team****(1)The Japanese Team**

Name	Assignment	Occupation
Kazuo TANIGAWA	Head	Special Technical Advisor, Japan International Cooperation Agency (JICA)
Ikuo TAMORI	Industrial Environment Protection	Senior Advisor, Japan Quality Assurance Organization (JQA)
Keiji HANDA	Industrial Environment Administration	Senior Researcher, International Relationship Office, International Affairs Department, National Institute of Advanced Industrial Science and Technology (AIST)
Dai MIZUGUCHI	Evaluation Planning	Staff, Middle East and Europe Division, Regional Department 4, Japan International Cooperation Agency (JICA)

**(2)The Hungarian Authorities concerned (Members of the Steering Committee of the Project)**

Name	Job Title	Occupation
Dr. Endre KISS	Director General	The College of Dunaujvaros
Dr. Geza AGG	Senior Advisor	Higher Education Department, Ministry of Education
Ms. Eszter SZOVENYI	Chief Counsellor	Department for International Relations, Ministry for Environment
Dr. Julia VAGO	Senior Counsellor	Ministry of Economy and Transport
Ms. Marta HIBBEY	Ministerial Counsellor	Department of Environmental Protection, Ministry of Economy and Transport

K62

## **2. Review of the project activities and outputs from January 2002 to January 2003**

### **2-1. Inputs from Japanese side**

#### **2-1-1. Long-term experts**

3 long-term experts have been dispatched in the following main fields.

- |                                   |                     |
|-----------------------------------|---------------------|
| (1) General environmental matters | 2002.1.15~2004.1.14 |
| (2) Water pollution prevention    | 2002.1.15~2004.1.14 |
| (3) Energy saving and recycling   | 2002.1.15~2004.1.14 |

#### **2-1-2. Short-term experts**

3 short-term experts have been dispatched and 1 short-term expert is to be dispatched in the following fields.

##### **(1) In the field of general environmental matters / air pollution**

- |   |                      |
|---|----------------------|
| • ISO 14000 series for environmental management         | 2002.9.15~2002.12.14 |
| • Measurement of air pollution and atmospheric reaction | 2002.11.9~2002.11.23 |
| • Diffusion and prediction of air pollution             | 2002.11.9~2002.11.20 |

##### **(2) In the field of water pollution**

- |  |   |
|--|---|
| • Techniques for measurement and calculation | 2003.1.25~2003.2.15<br>(to be dispatched) |
|--|---|

#### **2-1-3. Counterpart training in Japan**

2 counterpart personnel were accepted for technical training in Japan.

- |   |                     |
|---|---------------------|
| (1) Measurement of environmental pollution                            | 2002.6.10~2002.8.30 |
| • Mr. Gabor Hajos, Senior lecturer, the College of Dunaujvaros        |                     |
| (2) Management of atmospheric environment                             | 2002.6.10~2002.8.30 |
| • Mr. Miklos Horvath, Associate professor, the College of Dunaujvaros |                     |

#### **2-1-4. Provision of Equipment**

See ANNEX 1

## **2-2. Inputs from Hungarian side**

### **2-2-1. Assignment of Counterpart personnel**

#### From the College of Dunaujvaros

Dr. Endre Kiss, Director General  
Mr. Miklos Horvath, Associate Professor  
Mr. Istvan Jenei, Associate Professor  
Mr. Gabor Hajos, Senior Lecturer  
Ms. Beata Farkas, Assistant Lecturer  
Ms. Orsolya Havellant, Research Fellow Worker  
Ms. Eva Kovacs-Bokor, Secretary and Laboratory Assistant

#### From Dunaferri company

Dr. Laszlo Hari, Chief Environment Engineer  
Dr. Miklos Kovats, Environmental Manager

#### From the municipality

Ms. Ildiko Petrovickij Angerer, Environmental Protecting Chief Consultant

### **2-2-2. Provision of facilities**

#### Office

3 rooms for Japanese long-term experts  
1 room for Japanese short-term experts

#### Other facilities

5 laboratories  
2 seminar rooms

#### Local management cost

240 million Forints for construction of new school building  
(2-story building, a part of ground floor and basement offered for the project team activities)

## 2-3. Activities and their outputs

Project activities so far are divided into 21 categories in the chart. The current situation of these activities are summarized in the following chart.

(1) Corresponding to main purpose output 1: Lecturers necessary for the main course in environmental engineering are trained.

Activities	Results and outputs
1-1. Do routine technical exchange with C/P personnel mainly in 3 fields (general environmental management, water pollution, energy saving and recycling).	<p>Besides the routine technical exchange between Japanese experts and C/P personnel, all members of the Project team attend the regular meeting once a week for about 2 hours. At this meeting, Japanese experts deliver lectures and make video presentations, or consult with C/P. Sometimes C/P make presentation of their own fields.</p> <p>Some C/P personnel at the college were so busy with their work (20~30 lectures in a week, one lecture for 45 minutes) especially in the first semester (from September to December 2002) that it was difficult for them to have sufficient time with Japanese experts in this period. However, C/P personnel have steadily acquired basic knowledge and expertise of environmental engineering in their own field through the instructions of Japanese experts. One example for their progress is that they have made their own presentations in environmental seminars or workshops. For the outputs of one-year activity of the Project, these results are reasonable for finally accomplishing the development of lecturers for the main course in environmental engineering within the Project period.</p>
1-2. Introduce C/P personnel advanced environmental techniques in their related fields by training in Japan.	<p>2 C/P personnel had participated in the technical training in Japan from June 10 to August 30, 2002. Mr. Horvath and Mr. Hajos have learned a variety of advanced knowledge and techniques according to their field such as air pollution control, environmental monitoring system and operation of related equipment. This training is evaluated as very useful in that they take advantage of this experience and up-to-date materials in their own work. They also disseminate the knowledge gained in Japan to their fellow C/P personnel through presentations.</p>
1-3. Transfer specific environmental knowledge and techniques to C/P personnel by short-term experts.	<p>3 Japanese short-term experts had been dispatched and completed their missions. Mr. Ando, expert in ISO 14000 series for environmental management, has transferred comprehensive knowledge and practical method to acquire ISO 14001 certificate mainly to 2 C/P personnel (Mr. Jenei in the College and Dr. Kovats in Dunaferri company). His activities also motivated the College to acquire ISO 14001 certificate in future. Dr. Yamamoto and Mr. Kaneyasu, experts in air pollution control, have transferred basic and advanced ideas of air quality preservation mainly to 3 C/P personnel (Dr. Kiss, Mr. Horvath and Mr. Istvan in the College).</p> <p>3 short-term experts had also made their presentation in a few environmental seminars and workshops, contributing to enhancing the environmental consciousness of citizens and other persons concerned in the environmental issues in Hungary.</p>

1-4. Jointly study the current situation of environmental issues in the municipality and other areas in Hungary	<p>One of the results here was that Japanese experts and C/P personnel visited Dunaferr company's and other companies' factories for deepening the understandings of the current situation of industrial environmental problems. For most of C/P personnel, these visits are very precious experience as they can hardly find opportunities to see real situation of environmental issues in industry. In the second year of the Project, more emphasis will be put on these activities for acquiring up-to-date information of industrial pollutions.</p> <p>Another result is that Ms. Havellant in the College studies the situation of environmental problems in the municipality of Dunaujvaros. Ms. Petrovickij, Environmental Protecting Chief Consultant in the municipality, gives support to her study by providing the environmental data of the city. This cooperative activities will be continued in the second year as well.</p>
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(2) Corresponding to main purpose output 2: The curriculum of the course is developed and maintained.

Activities	Results and outputs
2-1. Jointly examine educational contents required for the course.	Japanese experts and Dr. Kiss have started the discussions on the future curriculum of the main course in environmental engineering. However the educational contents required remain unfixed yet because the surrounding situation of the College such as accession to EU largely affects on the educational contents in future. Now the project team put the priority on widening the knowledge of C/P so as to deal with various future demands to the college education.
2-2. Reflect opinions of the Project Steering Committee members on the new curriculum of the course.	Although the Steering Committee was held twice in March 2002 and in January 2003, the discussion on the curriculum contents is not started yet in the Steering Committee. Since it is important to be in harmony with the national policies of environmental protection, more argument about the direction of education, not about details of curriculum, will be expected in the Steering Committee as advisory organization of the Project.
2-3. Reflect opinions of environmental engineers working at companies on the new curriculum of the course.	In the first year, the project team was not so active in this category of activity. But, Dr. Kovats, one of the C/P personnel from Dunaferr company, is cooperative in this matter. In the second year of the Project, not only Japanese experts but also all the project team is requested to be more conscious of this work when they visit companies and factories for surveying industrial pollutions.
2-4. Make up the new curriculum.	Tasks are not yet completed. The main course in environmental engineering is supposed to start in September 2003, but the curriculum will be flexible even after the opening of the main course. In the second year, the project team will put more emphasis on the research of industrial environmental problems by surveying the companies and factories. And in the third year, the project team will make up the curriculum based on the outputs of 2-year activities. Now it is still at the early stage.



(3) Corresponding to main purpose output 3: Teaching materials and equipment necessary for the course are prepared / maintained.

Activities	Results and outputs
3-1. Select necessary equipment according to the expected new curriculum contents.	Selection of the equipment was almost finished through the discussions between Japanese experts and Dr. Kiss. The project team recognizes that the selection was correctly done according to the needs of the College.
3-2. Procure and set up the selected equipment.	More than 50% of equipment has already been procured and set up in newly constructed school building. The other equipment is now under quotation and is supposed to be procured within the year 2003. These results are reasonable for finally accomplishing the development of educational equipment and apparatus of the main course in environmental engineering.
3-3. Train C/P personnel to be able to operate the procured equipment.	Some of the equipment procured are already used by C/P and students. However, main equipment such as gas chromatograph and atomic absorption spectrometer were just delivered and installed in the College. C/P personnel are requested to learn how to operate equipment with the instructions from Japanese experts. These tasks are to be implemented in the second year of the Project.
3-4. Make teaching materials corresponding to the new curriculum	Some teaching materials are prepared by the Japanese experts in the process of their instructions to C/P personnel. Now, there exists a book of comprehensive materials (about 200 pages, also for students' use) which contains not only the topics of environmental engineering but other topics such as mechanical engineering, and the Japanese experts also contributed to making some part of these materials. In the second year, the project team is requested to start the compilation of the teaching materials that have been already made or will be made from now. According to Dr. Kiss, textbooks cannot be easily made and more time is needed. It is expected to made up a book of teaching material for lecturer by the end of the project period.

(4) Corresponding to main purpose output 4: The On-the Job Training (OJT) at Dunaferri and other related organizations are incorporated for training counterpart personnel.

Activities	Results and outputs
4-1. Study the situation of environmental protection activities of Dunaferri company and other related organizations.	Japanese experts and C/P personnel jointly implemented study tours to Dunaferri company's and other related organizations' factories 5 times. They also visited other companies and several municipalities' facilities. They deepened their understandings in general situation and the process of pollution emission and environmental protection methods. In the second year of the Project, more emphasis will be put on these activities for acquiring up-to-date information of industrial pollutions.
4-2. Examine the possibility of the OJT for C/P personnel at Dunaferri company and other related organizations.	The College and Dunaferri company are in good relationship for realizing OJT in the company and factory. According to Dr. Kovacs, one of the C/P personnel from Dunaferri company, it is possible to offer opportunities of OJT not only for other C/P personnel but also for the student of the College.

4-3. Implement the OJT for C/P personnel	Although C/P personnel participated in a few study tours in Dunaferr and other related companies, experiment or practical training in companies or factories are not yet started. These works will be tackled with in the second year of the Project.
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(5) Corresponding to sub-purpose output 1: Consciousness and understandings (of the college staff and students, municipality staff, companies, related ministries and citizens) towards environmental protection in the municipality and other areas in Hungary are enhanced.

Activities	Results and outputs
1-1. Survey the interests of the persons engaged in the environmental issues in the municipality and other areas in Hungary.	Before holding environmental seminars and workshops, the project team received the requests for presentation from municipalities or related environmental organizations, and well discussed with them about the topics of the seminars in advance. In case of environmental seminar in Gyor, Japanese experts even had a discussion with local NGOs about the theme of the seminar beforehand. These works are well done so far for the preparation of seminars and workshops.
1-2. Hold environmental seminars and workshops corresponding to the above-mentioned interests.	The project team has been very active in holding environmental seminars and workshops during one year. The number of outside presentation counts 13 times from February to December 2002. These seminars were held not only in the College, but also in Budapest, Szeged, Szentendre and Gyor. The presentations covered a variety of fields such as waste management, energy saving, waste water treatment, ISO 14000 series, etc. Some of the seminars and workshops were open to the public, disseminate important information and knowledge to enhance the social awareness towards the environmental issues. For the outputs of one-year activity of the Project, these results are reasonable for finally accomplishing the sub-purpose output 1.
1-3. Hear the opinions of seminar (or workshop) participants by questionnaire.	The project team has got a good reputation in their seminars through newspapers or letters from municipalities. Once questionnaire survey was done to citizens, the project team unfortunately receives answers from only 4 persons. However these efforts should be kept throughout the project period.
1-4. Reflect the above-mentioned opinions to the next seminars and workshops.	This task will be tackled with in the second year of the Project.

(6) Corresponding to sub-purpose output 2: Opinion and information exchange place among the persons engaged in the environmental issues in the municipality is established.

Activities	Results and outputs
2-1. Examine and clarify the purpose of opinion and information exchange among the persons engaged in the environmental issues of the municipality.	Now the purpose of the regular meeting is mainly for the efficient and smooth management of the Project. But Japanese experts intends to let this meeting continue after the expiration of the Project, for cooperation among the colleges, companies and municipalities is important to tackle with environmental matters in the municipality. The project team is now at the stage of building a system of mutual cooperation of related organizations.

<p>2-2. Hold regular meetings for opinion and information exchange among the college staff, municipality staff, companies and citizens.</p>	<p>As mentioned above, all members of the project team including Dr. Hari and Dr. Kovats from Dunaferri company and Ms. Petrovickij from the municipality attend the regular meeting once a week. Through this meeting, information exchange among the College, Dunaferri company and the municipality is kept close and they are in good relation for mutual cooperation. In the second year of the Project, opinion and information exchange place is desired to be more open for the participation of citizens and local NGOs.</p>
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### 3. Evaluation by five criteria

#### 3-1. Relevance

The Project aims at improving the educational quality for environmental protection at the College of Dunaujvaros which is located at the core point in Hungary, and establishing the mutual cooperation among the College, the Dunaferri company and the municipality. The overall goal and the project purpose are still in accordance with the national environmental policy of Hungary, taking into account the social state of the country facing the EU accession. EU requests the country to harmonize with its legislative and social systems, especially in the field of environmental protection.

The contents of the specialty of Japanese experts, counterpart training in Japan, and equipment provided for education and experiment were precisely elaborated based on the request of the College, and can be judged to be still valid even one year after the opening of the Project.

However, the country is still revising the legislative and social systems for environmental protection just before the EU accession, and it is possible that requirements for improving the environmental quality would be shifted. Therefore, the plan of the Project may be requested to be modified in accordance to prospective changes in the vision of the environmental education in the College. For example, one of the most serious environmental issues in the country is solid waste management. The project team might be requested to pay more attention to this field.

#### 3-2. Effectiveness

After two years from the opening of the sub-course in the environmental engineering at the College in 2001, the number of lecturers was increased under the cooperation of the Dunaferri company and the municipality, encouraged by the start of the Project, and the outputs for improving the educational quality of the course are steadily being produced with the technical transfer from Japanese experts, counterpart

training in Japan, provision of equipment, survey activities in related factories and facilities.

In parallel with the outputs for the project main purpose, the relationship among the College, companies and municipalities has been strengthened as well. The weekly regular meeting between Japanese experts and counterpart personnel was established, resulting in cooperative relationships among the College, Dunaferri company and the municipality of Dunaujvaros. And the project team has been quite active and successful in holding environmental seminars and workshops for enhancing the environmental awareness of related persons and the public, not only in the municipality and the College of Dunaujvaros, but also in other areas such as Budapest, Gyor, Szeged and Szentendre. It seems that the Project is building the bases for establishing a close environmental network that connects different areas in Hungary, although the long-lasting and stable relationship needs timeless and continuous effort in future beyond the Project.

These outputs within the first year are worth being highly evaluated as fruitful results for finally accomplishing the project main and sub-purposes.

### **3-3. Efficiency**

The project has been steadily and successfully implemented during the first one year. Inputs from Japanese side so far --- dispatches of three (3) long-term and three (3) short-term experts, counterpart training in Japan for two (2) counterpart personnel, and provision of equipment --- are timely and efficiently functioning as planned. Activities of Japanese experts resulted in giving various outputs for both the main and sub purpose as mentioned above, hardly showing signs of surplus or short of inputs.

On the other hand, such an efficient implementation would not have been possible without the active participation of the Hungarian side. This devotion has to be highly evaluated by the Japanese side.

Some of the counterpart personnel seem to be so busy for their own duties to prepare their lectures to students and various activities as the college staff. The evaluation team wishes it would not hinder progress of the project activities in future.

### **3-4. Impact**

During the first one year, the Project has been steadily progressed. The project team has made efforts to enhance the citizen's consciousness of environmental protection through the seminar and workshop such as the opening ceremony of the Project, the Open Day of the environmental protection held at the city hall, and so on.

Outside of the municipality, the Project succeeded in the seminars and workshops on environmental protection at some regional areas such as Budapest, Gyor, Szeged and Szentendre, etc.

The College is going to acquire ISO 9001 certificate within this year for enhancing and maintaining the quality of education, and moreover it intends to construct a management system based on ISO 14001 for integrating environmental protection into the education and research works. The activity can be taken as one of the strong impacts given by the Project.

### **3-5. Sustainability**

Through the mid-term evaluation study, the Japanese Team confirmed that the Project keeps enjoying enough supports from the College of Dunaujvaros, Dunaferri company, the municipality of Dunaujvaros, and other Hungarian authorities concerned such as Ministry of Education, Ministry of Environment and Ministry of Economic and Transport.

From the viewpoint of Hungarian national policy, the concept of the Project is still in line with the priorities of above-mentioned ministries. Just prior to the accession to EU in May 2004, the needs for qualified environmental engineers have been growing in the society and industry of the country. In this sense, it is expected that the project would be supported as well for the rest of the period.

From the viewpoint of manpower, it seems that inputs from both Japanese and Hungarian sides are sufficiently provided. For this project, the College of Dunaujvaros assigned mainly 7 counterpart personnel including Dr. Kiss, Director General of the College. Dunaferri company and the municipality of Dunaujvaros also assigned its staff to the Project. The project team composed by these Hungarian staff and Japanese experts are in very good cooperative relations and the human resources development is in progress. In this sense, it is not exaggeration to say, at this stage, that it will be possible to realize sustainable developing situation by the end of the project period, if the present efforts and measures are secured.

From the viewpoint of financial aspect, no major problems are identified at this stage.

It is judged that the project team keeps paying a sufficient attention in this criterion, and is steadily building the future sustainable system of the outputs obtained.

#### **4. Plan of operation in 2003**

##### **(1) Inputs**

The Japanese Team shall recommend to the Japanese government that the following inputs should be taken in the Japanese fiscal year (JFY) 2003.

##### Japanese experts in JFY 2003 (See ANNEX 2)

5 short-term experts in the following fields

1) Motor Vehicle Emission Control	1 person	2 weeks
2) Hazardous Waste Treatment	1 person	3 weeks
3) Factory Diagnosis	1 person	1 month
4) Life Cycle Analysis	1 person	2 weeks
5) Stationary Sources Emission Control	1 person	3 weeks

##### C/P training in Japan in JFY 2003 (See ANNEX 3)

4 C/P training in the following fields

1) Environmental Management	2 persons	1 month
2) Waste Water Pollution Control	2 persons	1 month

##### **(2) Activities planned in 2003**

Along with the activities corresponding to 6 outputs of the Project, the project team puts more emphasis on the following 3 works in 2003.

- 1) Running of equipment and facilities in the laboratory of the College
- 2) Survey at sites of final treatment facilities or factories (landfills areas) in Hungary
- 3) Visiting medium and small scale companies under cooperation of the Ministry of Economy and Transport

#### **5. Revision of the original PDM (from PDM 0 to PDM 1)**

Through the mid-term evaluation, both sides agreed to modify the PDM 0 which had been authorized in the Minutes of Meetings signed on August 27, 2001, into PDM 1 shown in ANNEX 4. As the project activities have progressed, the PDM 0 became insufficient for precisely describing the outline of the current state of the Project.

The purpose of this modification is to clarify project logical framework so that all concerned persons have a common picture of the Project. This further facilitates the project team to grasp the progress of the project activities for successful accomplishment of the project purpose.

Basically, PDM 1 doesn't change the general direction of PDM 0. It subdivided

the project activities and prepared the indicators for evaluation. Major changes are as follows;

- (1) Two original project purposes were positioned as "project main purpose" and "project sub-purpose", for normally project purpose is one.
- (2) The project outputs necessary for achieving the project purpose were divided into 6 (4 for main purpose, 2 for sub-purpose), and activities corresponding to 6 outputs are described in more detail chronologically.
- (3) Indicators for evaluating the achievement of Project were added.

## **6. Conclusion and recommendations**

The mid-term evaluation was made jointly between the Hungarian and the Japanese sides in a friendly and cooperative atmosphere by exchanging information, views and opinions candidly. In accordance with the guideline, i.e., 5 criteria (Relevance, Effectiveness, Efficiency, Impact, and Sustainability), the evaluation was conducted smoothly and efficiently along with the original schedule.

Although the implementation period of the Project is so far only one year, it was observed that both governments made their utmost efforts by taking necessary measures respectively as agreed in the Minutes of Meetings in August 2001. Since there were made timely inputs by both sides, it seems that the transfer of technology has been in progress to a large extent, thanks to the mutual fervent efforts made between the C/P personnel of the College of Dunaujvaros and the Japanese experts. Therefore, it is expected that the project purpose will be achieved by the end of the project as far as the preconditions and important assumptions stipulated in PDM 1, such as the environmental policy at both national and local government levels, the cooperation from Dunafer company and other related organizations, etc., will be secured as they are. At present, it is a little too early to touch on the future prospect of the Project, but there seems to be a high possibility of its sustainability after the expiry of the cooperation period.

In line with the project activity, the College of Dunaujvaros has actively been making an extensive propaganda about their own college and the Project by keeping in a close contact with the ministries concerned, various local governments, companies from Dunafer company on down, and citizens through seminars and workshops, thus contributing highly to enhancing their consciousness and understandings of environmental protection. These activities should be continued also for making the main course in environmental engineering more attractive to students. The number of students

is one of the most important factors in this Project since it aims at increasing future environmental engineers.

As a result of technology transfer, the positive impact was brought about since the C/P personnel became conscious of the need for acquiring ISO 14001 certificate in near future. Moreover, the Japanese experts are giving lectures in various places at the request of various organizations including international organization (Regional Environment Center: REC).

Since the Project has been implemented smoothly at present, it is recommended that both governments should continue to support the Project based on the PDM 1 agreed upon between the College of Dunaujvaros and Japanese team, so that appropriate inputs and activities will be secured from both sides for the rest of the project period.

Concerning the Steering Committee which was set up as advisory group for smooth implementation of the Project, it was held only once for the past one year. So, it is recommended the Steering Committee meeting will be held more frequently whenever necessity arises.

With the EU accession just around the corner, the demand for fostering the environmental engineers has been on the increase from the standpoint of environmental protection advocated by EU. Herein the role of the College of Dunaujvaros will become more and more important. For future human resources development in this field as well as a successful implementation of the Project, it is keenly recommended that a closer cooperation with Dunafer company should be encouraged more than ever before so as to secure the place for the on-the-job training for not only C/P personnel but also students. At the same time, the project team is advised to pay close attention to the prospective privatization of Dunafer company, because it could affect on the sustainability of the project outputs.

ANNEX 1: Equipment input plan chart

ANNEX 2: Input plan chart of Japanese experts

ANNEX 3: Input plan chart of C/P training in Japan

ANNEX 4: PDM 1



## ANNEX 1

DEED(Development of Environmental Education in Dunaujvaros)  
Provision of Equipment (procured and transported from Japan)

Equipment	Price (Kiro yen)	Unit	Install	JFY 2001	JFY 2002	JFY2003	JFY 2001	JFY 2002	JFY 2003
<b>Air / Energy saving</b>									
1. Preparation Apparatus for Exhaust Gas Samples	1400	1	Feb.02	→			○		
2. Exhaust Gas Analyzer	300	1	Feb.02	→			○		
3. Humidity / Temperature Meter	70	1	Feb.02	→			○		
4. Gas Flowmeter (Pitot Tube)	85	1	Feb.02	→			○		
5. Multi-Electric Tester	700	1	Feb.02	→			○		
<b>Water Pollution</b>									
1. Pure Water Producer	1050	1	Feb.02	→			○		
2. Educational Apparatus (Bomb Tester)	450	1	Feb.02	→			○		
(Jar Tester)	320	1	Feb.02	→			○		
3. pH Meter	185	1	Feb.02	→			○		
4. TOC Analyzer	4,100	1	Feb.03		→			○	
<b>Noise / Vibration</b>									
1. Noise Meter	150	1	Feb.02	→			○		
2. Vibration Analyzer	350	1	Feb.02	→			○		
3. Frequency Analyzer	1,200	1	Feb.02	→			○		
<b>Common Equipment</b>									
1. Data Processor									
PC	900	3	Feb.02	→			○		
Printer	100	2	Feb.02	→			○		
Scanner	20	1	Feb.02	→			○		
2. VT Camera	250	1	Feb.02	→			○		
<b>Books</b>									
Environment, Laws, Science, etc.	500		Feb.02	→			○		
Sum	12130						8030	4100	

K62

ANNEX 1

DEED(Development of Environmental Education in Dunaujvaros)  
Provision of Equipment (procured in Hungary)

Equipment	Price (Kiro yen)	Unit	Install	Timing			Situation of Set-up		
				JFY 2001	JFY 2002	JFY 2003	JFY 2001	JFY 2002	JFY 2003
<b>Air Pollution / Energy Saving and Material</b>									
1. Gas Chromatograph with Mass Spectrometer	9,000	1	Jan.03		→			○	
2. Educational Apparatus									
Experimental Apparatus for Combustion Analyzing in Energy Saving Education	1,500	1	Feb.03		→			○	
Electric Power Reduction in Energy Saving Education	600	1	Mar.03		→			○	
Separation System of Waste for Recycle Technology Education	900	1	Feb.03		→			○	
<b>Water Pollution</b>									
1. Atomic Absorption Spectrometer	3,750	1	Feb.03		→			○	
2. Educational Apparatus									
Coagulation Sedimentation Equipment	1,550	1	Mar.03		→			○	
Activated Sludge Treatment Equipment	1,000	1	Mar.03		→			○	
Neutralization Equipment	800	1	Mar.03		→			○	
3. Consumable Parts	In Quotation				→				Planned
<b>Common Meters</b>									
<b>Fundamental Equipment</b>									
1. Digital Projector	600	1	Feb.03		→			In Quotation	
2. Suspended Particulate Matter Analyzer	700	1	Mar.03		→			In Quotation	
3. Chemical Agent and Standard Gas-Liquid (-Materials)	1500		Mar.03		→			In Quotation	
4. Electric Furnace, Boats, Electric Transmission, etc.	1500		Mar.03		→			In Quotation	
5. Evaporator / Filter Paper, etc.	1500		Mar.03		→			In Quotation	
6. Vacuum Pump, Mini-Pump	1500		Mar.03		→			In Quotation	
7. Others									
Lux Meter	100	1				→			Planned
Vibration Sieve for Preparation of Solid Samples	500	2			→				Planned
Portable Infra-red Tempometer	250	1			→				Planned
Tool for Glass works	150	1			→				Planned
Sum	27400								

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17/6

## ANNEX 2

### DEED(Development of Environmental Education in Dunaujvaros) Input Plan Chart of Japanese experts

Field	Period	2002	2003	2004	2005
General Environmental Matters	2 years				
Life Cycle Analysis	2 weeks				
Air Pollution					
Reaction / Measurement	2 weeks				
Diffusion / Prediction	2 weeks				
Motor Vehicle Emission	2 weeks				
Stationary Sources Emission Control	3 weeks				
Measurement in Site	1 month				
Energy Saving and Recycling					
Energy Saving and Recycling / Production Management	2 years				
ISO 14000	3 months / 2 months				
Cleaner Production Process	3 months				
Melting for Waste Treatment	1 month				
Factory Diagnosis	1 month				
Water Pollution					
Source Surveying / Waste Water Treatment	2 years				
Hazardous Waste Treatment	3 weeks				
Measurement / Calculation	3 weeks				
Endocrine Disrupters	2 weeks				
Vibration / Noise					
Vibration / Noise Surveying	3 weeks				

K62

DEED(Development of Environmental Education in Dunauivaros)  
Input Plan Chart of C/P training in Japan

XOZ

Period of project: 3 years (from Jan. 15, 2002 to Jan. 14, 2005)

Main target group: the College of Dunaujvaros, Dunafer company, the municipality

Main target area: Municipality of Dunaujvaros

PDM version: No.1

Date of revision: Jan. 22, 2003

Narrative Summary		Verifiable indicators	Means of verification	Important assumption
<b>Overall Goal :</b>  Human resources engaged in environmental issues in Hungary are developed and increased.		1. Number and technical level of graduate environmental engineers developed by the new course. 2. Number of citizens participating environmental protection activity.	1. Records of administration office of the college 2. Interviews to C/P personnel and companies 3. Japanese experts' reports	Developed resources continuously work for environmental protection.
<b>Project main purpose:</b> Educational quality of the environmental engineering course at the College of Dunaujvaros (hereinafter referred to as "the college") is improved.	<b>Project sub-purpose:</b> Opinion and information exchange regarding the environmental issues in the municipality of Dunaujvaros and sub-regions (hereinafter referred to as "the municipality") is continuously kept among academic, public and private sectors.	<b>(For main purpose)</b> 1. Opening of environmental engineering main course in 2003 2. Quality of the new curriculum, textbooks and equipment provided 3. Increased number of students in the new course. <b>(For sub-purpose)</b> 1. Number of the opinion and information exchange meeting 2. Outputs of the meeting	<b>(For main purpose)</b> 1. Records of administration office of the college 2. Interviews and/or questionnaire survey to C/P lecturers, students and other persons concerned 3. Japanese experts' reports <b>(For sub-purpose)</b> 1. Japanese experts' reports	1. The College and other authorities concerned continue to support the new course.  2. Hungarian national policy keeps high priority on environment protection.
<b>Outputs:</b> 1. Lecturers necessary for the main course in environmental engineering (hereinafter referred to as "the course") are trained.  2. The curriculum of the course is developed and maintained.  3. Teaching materials and equipment necessary for the course are prepared / maintained.  4. The On-the-Job Training (OJT) at Dunafer company and other related organizations are incorporated for training C/P personnel.	<b>Outputs:</b> 1. Consciousness and understandings (of the college staff and students, municipality staff, companies, related ministries and citizens) towards environmental protection in the municipality and other areas in Hungary are enhanced.  2. Opinion and information exchange place among persons engaged in the environmental issues in the municipality is established.	<b>(For main purpose)</b> 1. Number of trained C/P personnel 2. Kind of educational contents newly introduced by the project 3. Quality of the new curriculum, textbooks and equipment provided 4. Opening of the OJT training at Dunafer company and its quality <b>(For sub-purpose)</b> 1. Number of opinion and information exchange meeting 2. Contents and outputs of the meeting 3. Number of seminars and workshops and their participants 4. Degree of understandings of the participants 5. Evaluation of the seminars and workshops by the participants	<b>(For main purpose)</b> 1. Interviews and/or questionnaire survey to C/P lecturers, students and other persons concerned 2. Japanese experts' reports <b>(For sub-purpose)</b> 1. Interviews and/or questionnaire survey to C/P lecturers, participants of the seminars and other persons concerned 2. Japanese experts' reports	1. Sufficient number of students is secured.  2. The College keeps high priority on environment education.

257

<p><b>Activities:</b></p> <p>1-1. To do routine technical exchange with the C/P personnel mainly in 3 fields (General environmental management, Water pollution, Energy saving and recycling).</p> <p>1-2. To introduce C/P personnel advanced environmental techniques in their related fields by training in Japan.</p> <p>1-3. To transfer specific environmental knowledge and techniques to C/P personnel mainly in 3 fields by Japanese short-term experts.</p> <p>1-4. To jointly study the current situation of environmental issues in the municipality and other areas in Hungary.</p> <p>2-1. To jointly examine educational contents required for the course.</p> <p>2-2. To reflect the opinions of the Project Steering Committee members on the new curriculum of the course.</p> <p>2-3. To reflect the opinions of environmental engineers working at companies on the new curriculum of the course.</p> <p>2-4. To make up the new curriculum.</p> <p>3-1. To select necessary equipment according to the expected new curriculum contents.</p> <p>3-2. To procure and set up the selected equipment.</p> <p>3-3. To train C/P personnel to be able to operate the procured equipment.</p> <p>3-4. To make teaching materials corresponding to the new curriculum.</p> <p>4-1. To study the situation of environmental protection activities of Dunaferri company and other related organizations.</p> <p>4-2. To examine the possibilities of the OJT for C/P personnel at Dunaferri company and other related organizations.</p> <p>4-3. To implement the OJT training for C/P personnel.</p>	<p><b>Activities:</b></p> <p>1-1. To survey the interests of the persons engaged in the environmental issues in the municipality and other areas in Hungary (college staff and students, municipality staff, companies, related ministries and citizens).</p> <p>1-2. To hold environmental seminars or workshops corresponding to the above-mentioned interests.</p> <p>1-3. To hear the opinions of seminar (or workshop) participants by questionnaire.</p> <p>1-4. To reflect the above-mentioned opinions to the next seminars or workshops.</p> <p>2-1. To examine and clarify the purpose of opinion and information exchange among the persons engaged in the environmental issues of the municipality.</p> <p>2-2. To hold regular meetings for opinion and information exchange among the college staffs, municipality staff, companies and citizens</p>	<p><b>Inputs from Japanese side:</b> (As of January 22, 2003)</p> <ul style="list-style-type: none"> <li>- 3 long-term experts (General environmental management, Water pollution, Energy saving and recycling)</li> <li>- 3 short-term experts (ISO 14000 series, Measurement of air pollution and atmospheric reaction, Diffusion prediction of air pollutants)</li> <li>- 2 C/P training in Japan ("Management of atmospheric environment", Mr. Miklos Horvath, "Measurement of Environmental pollutants", Mr. Hajos Gabor)</li> <li>- Provision of equipment Total amount: 31,230,000 yen (See ANNEX 1)</li> </ul>	<p><b>Inputs from Hungarian side:</b> (As of January 22, 2003)</p> <p>- C/P personnel: Dr. Endre Kiss, Director general, the college Mr. Miklos Horvath, Associate professor, the college Mr. Istvan Jenai, Associate professor, the college Mr. Gabor Hajos, Senior lecturer, the college Ms. Beata Farkas, Assistant lecturer, the college Ms. Orsolya Havellant, Research fellow worker, the college Ms. Eva Kovacs-Bokor, Secretary and Laboratory Assistant</p> <p>Dr. Laszlo Hari, Chief environment engineer, Dunaferri company Dr. Miklos Kovats, Environmental manager, Dunaferri company</p> <p>Ms. Ildiko Petrovickij Angerer, Environment protecting chief consultant, the municipality</p> <p>- Office for Japanese experts (3 rooms for long-term experts, 1 room for short-term experts)</p> <p>- 5 laboratories</p> <p>- 2 lecture rooms</p> <p>- Local cost 240 million Forints for construction of new school building (2-story building, a part of ground floor and basement offered for the project team activities)</p>	<p>1. C/P personnel continuously work for the Project.</p> <p>2. Dunaferri company's cooperation to the project is maintained.</p> <p>3. Active participation of the persons concerned is maintained.</p> <p><b>Preconditions:</b></p> <p>1. C/P personnel (prospective teachers mainly in 3 fields) are assigned at the college.]</p> <p>2. Understanding of representatives of industry, the ministries concerned, and the local government to the effect that they will be the members or observers of the steering committee is obtained.</p>
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