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UNIDO Contract No. 2005/130

Project No. MP/MCD/05/001

Final Report 2006

The project Terminal Phase out Management Plan in the Republic of Macedonia started on December 1st, 2006. The Center for Environmental Technologies, in cooperation with NOU had completed the following activities:

Training manuals

1. Manual for service technicians (in Macedonian and English language);
2. Manual for Custom officers (in Macedonian and English language);

Training course for professors from vocational secondary schools in the Republic of Macedonia;

Training courses in "Good Practices in Refrigeration" for service technicians;

Recovery and recycling scheme;

Training courses for Customs officers;

First Progress Report of the Project's development was sent to UNIDO on March 20th 2006.

Second Progress Report of the Project's development was sent to UNIDO on June 21st 2006.

Training Manuals

The Manuals were prepared by using the following documents:

- A. Training Manual on Good Practice in Refrigeration, UNEP DTI;
- B. Training manual on Chillers and Refrigerant Management, UNEP DTI;
- C. Training Manual for Customs officers UNEP;
- D. Publications in refrigeration technique and,
- E. Current Legislation in the Republic of Macedonia.

The Manual for service technicians contains the following Chapters:

1. The Ozone layer and the ozone depletion
2. Controlled Substances under the Montreal Protocol
3. *Basic elements of the refrigeration technique*
4. Good service practices
5. Recovery, recycling and reclaim;
6. Alternative refrigerants and technologies
7. Legislation
8. Annexes

The Manual for Customs officers contains the following Chapters:

1. Ozone layer: properties and process of depletion
2. Controlled Substances under the Montreal Protocol
3. National strategy for ODS phase-out
4. Prevention of illegal trade
5. Identifying ODS
6. Annexes

On March 20th, 2006 the draft version of these handbooks, translated in English, were sent in hard copy and electronic version to UNIDO - Vienna.

(First Progress Report as per Contract No. 2005/130, Paragraph 2.09 a)

On June 21st 2006 the final version of the manuals, both in English and Macedonian language were sent in hard copy and electronic version to UNIDO – Vienna.

(Second progress report as per Contract No. 2005/130, Paragraph 2.09 b)

Materials sent with the second progress report

- Manual for service technicians in English and Macedonian;
- Manual for Customs officers in English and Macedonian;
- Specimen of Certificate for professors from the vocational schools;
- Specimen of Certificate for service technicians;
- Manuals on CD.

The Manual for service technicians was printed in 500 copies.

Manual for Customs officers was printed in 300 copies.

Training course for professors

Selection of vocational secondary schools in the Republic of Macedonia

In the period from December 2005 - April 2006 a number of vocational secondary schools were visited. The main purpose of the visits was to select participants for the planned training “Good Practice in Refrigeration” for the professors of these schools.

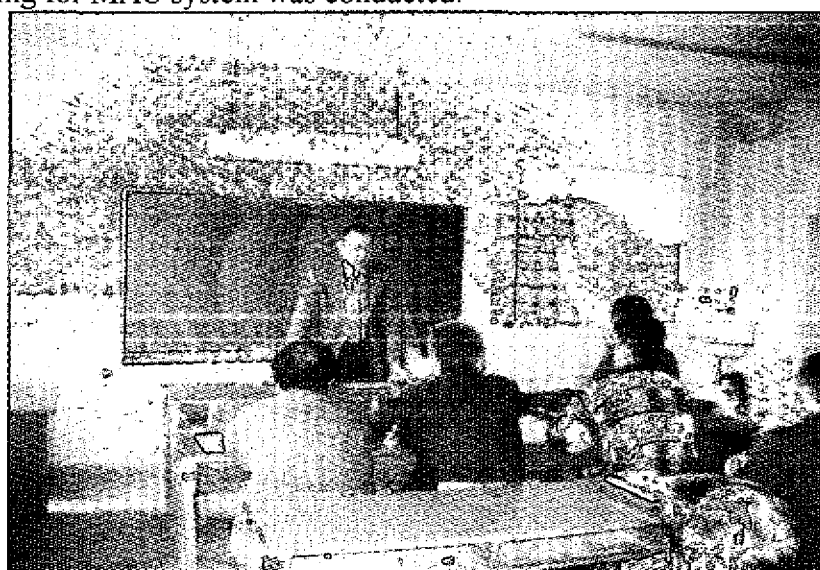
The following schools were visited:

No	Technical Secondary School	Address	Director	Tel No
1	SOU “Goso Vikentiev”	29 Noemvri, 2300 Kocani	Nikola Savev	389 33 294247 389 33 294001
2	DSTU “Nace Buxoni”	1300 Kumanovo	Dimitar Docevski	389 901 34 235
3	SSOU “Kole Nedelkovski”	Andon Surkov br.4 1400 Veles	Goce Aleksovski	
4	SOU “Kiro Spanxov Brko”	Siska bb, Kavadarci	Toso Radnjanski	389 43 412 847 389 43 414 209
5	DSEMU “Riste Rickovski Ricko”	Tocila bb, 7500 Prilep	Ceselkoski Petre	389 48 414 447 389 48 415 376
6	DSEMU “Gorgi Naumov”	Partizanska bb, 7000 Bitola	Mihajlovski Aco	389 47 258707 398 47 258065
7	SOU “Kole Nehtenin”	Goce Delcev 101, 2000 Stip	Jane Milanov	389 32 391384
8	CSNO “Zlate Malakoski”	1230 Gostivar	Dzaferi Nexadin	389 42 214133
9	DETU “Mihajlo Pupin”	Blagoja Stefkovski bb, 1000 Skopje	Eftim Pejovski	389 2 2529720
10	EMUC “Sv. Naum Ohridski”	6000 Ohrid	Bosko Siljanovski	389 46 266 142 389 46 262174
11	EMUC “Nikola Karev”	2400 Strumica	Slobodan Veta	389 070374617
12	MUC “8 septemvri”	1000 Skopje	Zoran Lazarevski	389 2 3175077

From all the schools listed above, 26 participants were selected and invited to attend the training.

On May 12th -14th, 2006, at the Technical University in Bitola a three-day training course in “Good Practices in Refrigeration” was held. The lecturers for the theoretical part were: Prof. Dr. Gorgi Trombev, Assistant Ms.C Sanja Popovska Vasilevska and Prof. Dr. Kiril Popovski. The practical part was held by Bs.c. Mitre Staleski and Bs.c. Vlatko Martinovski. On May

14th, 2006 all the training participants visited the ARIAZONE Company in Ohrid, where the practical training for MAC system was conducted.

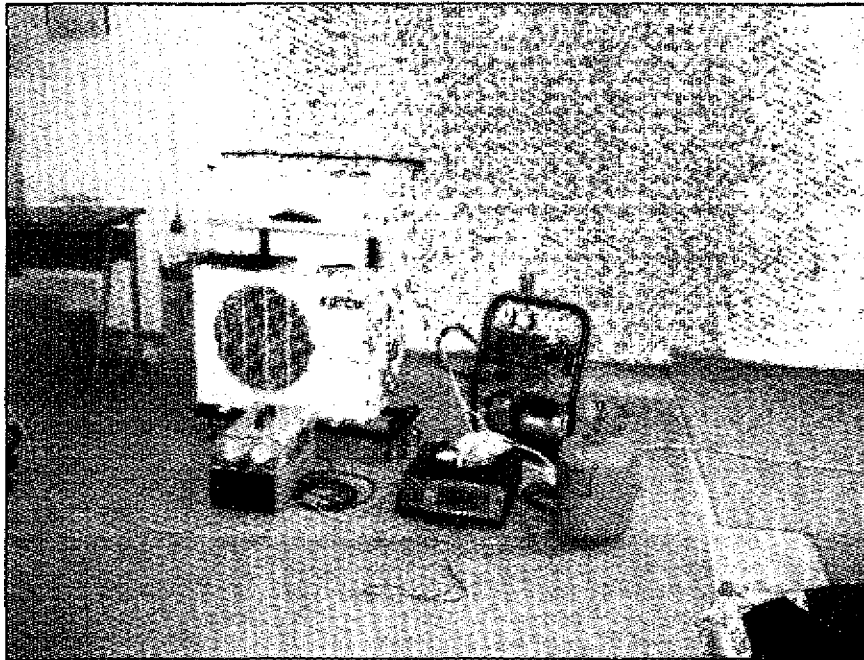


Picture 1. Presentation of Prof. Dr. Gjorgji Trombev

The list of participants who attended the training is given in the table below.

No.	First and last name	Personal Identification Card No.	Certificate No	Technical Secondary School
1	Velkov Toni	1802974493007	22/2006	SOU "Goso Vikentiev" 2300 Kocani,
2	Manasiev Goran	0408970493009	21/2006	
3	Stojanovski Pavle	1107948420018	24/2006	DSTU "Nace Budjoni" 1300 Kumanovo
4	Nedelkov Dejan	0704973480003	01/2006	SSOU "Kole Nedelkovski", 1400 Veles
5	Mackov Laze	2804950460023	02/2006	
6	Kicev Jordan	0212967483017	24/2006	SOU "Kiro Spandjov Brko" Kavadarci
7	Temelkoski Zarko	2602962440018	10/2006	DSEMU "Riste Rickovski Ricko", 7500 Prilep
8	Gjoreski Zivko	1310953440035	08/2006	
9	Jovanovski Mitre	291094710028	14/2006	DSEMU "Gjorgi Naumov" Bitola
10	Niklevski Zoran	230296141006	11/2006	
11	Hristovski Tomislav	160496441018	12/2006	
12	Andonov Dimitar	0910946490004	23/2006	SOU "Kole Nehtenin" Stip CSNO "Zlate Malakoski" Gostivar
13	Kadir Salih	1908958473015	07/2006	
14	Stojkoski Dragisa	2406969473015	06/2006	
15	Jakupi Adem	0109979473054	08/2006	
16	Noveski Ivan	0707953473018	05/2006	
17	Elezi Mehdi	1510958473038	03/2006	
18	Agai Florin	0212969473019	04/2006	
19	Stojanov Timko	0611956450097	18/2006	DETU "Mihajlo Pupin" Skopje
20	Zlateski Dragi	2604956450012	20/2006	
21	Spoljaric Ivica	0212958450013	19/2006	
22	Pejovski Eftim	0102960450105	17/2006	
23	Sekuloski Vlado	2905955430018	15/2006	EMUC "Sv. Naum Ohridski" Ohrid
24	Ristoski Klime	1910958430000	16/2006	

For the purpose and needs of the training, the Center for Environmental Technologies prepared a demonstration air-conditioning unit – split system, especially suited for application to R&R equipment, and arranged all the necessary materials including provision of refrigerant and accessories. Each participant received a Manual for service technicians and CD.



Picture 2. Demonstration equipment



Picture 3. Application of R&R equipment

Each participant received a Certificate for successful completion of the training in “Good Practices in Refrigeration”.

Training courses in “Good Practices in Refrigeration” for service technicians

Agenda for training workshops for service technicians

The training for service technicians was planned as a two-day course and it includes a theoretical as well as a practical part. For each training course, max 20 participants were invited to attend.

Agenda for the training course:

First day – theoretical aspects

- 9⁰⁰ – 10³⁰ The ozone layer and depletion; Controlled substances under the Montreal Protocol and National Legislation
- 10³⁰ – 10⁴⁵ Coffee break
- 10⁴⁵ – 12¹⁵ Basic elements of the refrigeration technique
- 12¹⁵ – 12³⁰ Coffee break
- 12³⁰ – 14⁰⁰ Good services practices
- 14⁰⁰ – 15⁰⁰ Lunch
- 15⁰⁰ – 16³⁰ Recovery, Recycling and Reclaim, Alternative refrigerants and Technologies
- 16³⁰ – 16⁴⁵ Coffee break
- 16⁴⁵ – 17³⁰ Discussion

Second day – practical aspects

- 9⁰⁰ – 10³⁰ Introduction in use of R&R equipment; Application on specially prepared Air-conditioning unit
- 10³⁰ – 10⁴⁵ Coffee break
- 10⁴⁵ – 14⁰⁰ Training of participants in operating with R&R equipment
- 14⁰⁰ – 15⁰⁰ Lunch
- 15⁰⁰ – 16⁰⁰ Summary of the lessons learned and issuance of Certificates

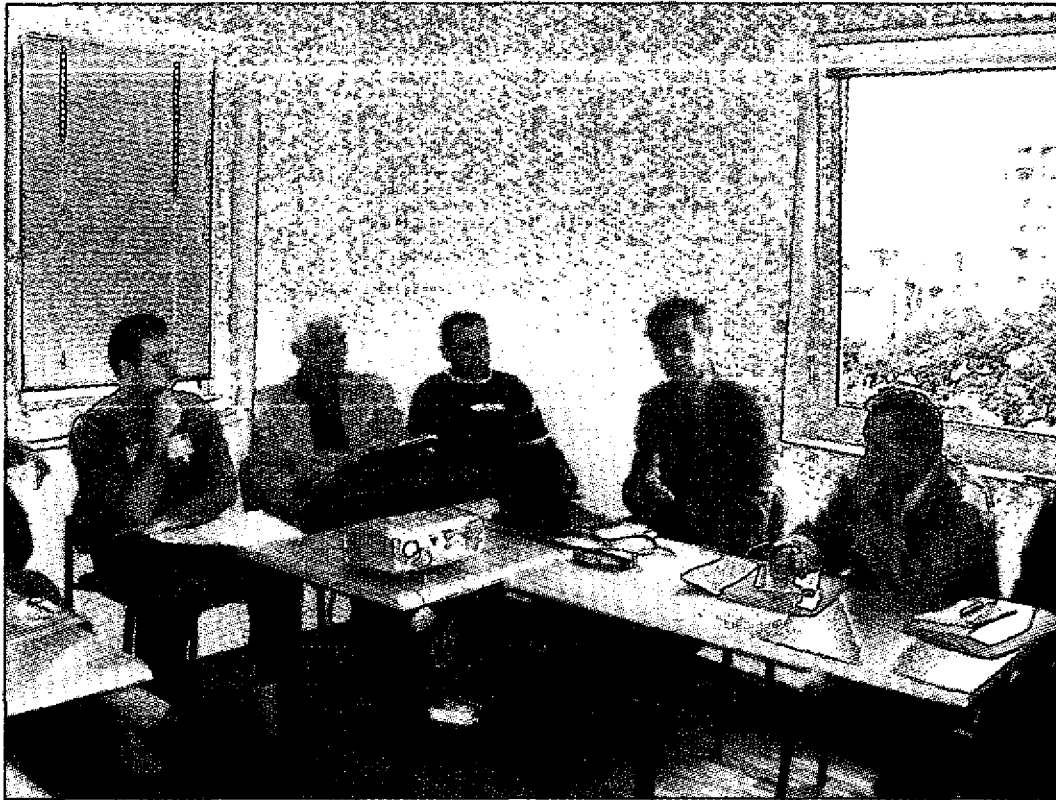
List of lecturers:

- Marin Kocov, NOU, topic “Ozone layer protection”;
- Nikola Stojanovski, CET, topic “Basic elements of the Refrigeration technique”;
- Josif Blagoevski, CET, topic “Good service practices, alternative refrigerants and technologies”;
- Ljupco Trpcevski - technical assistant.

Training courses

First training course

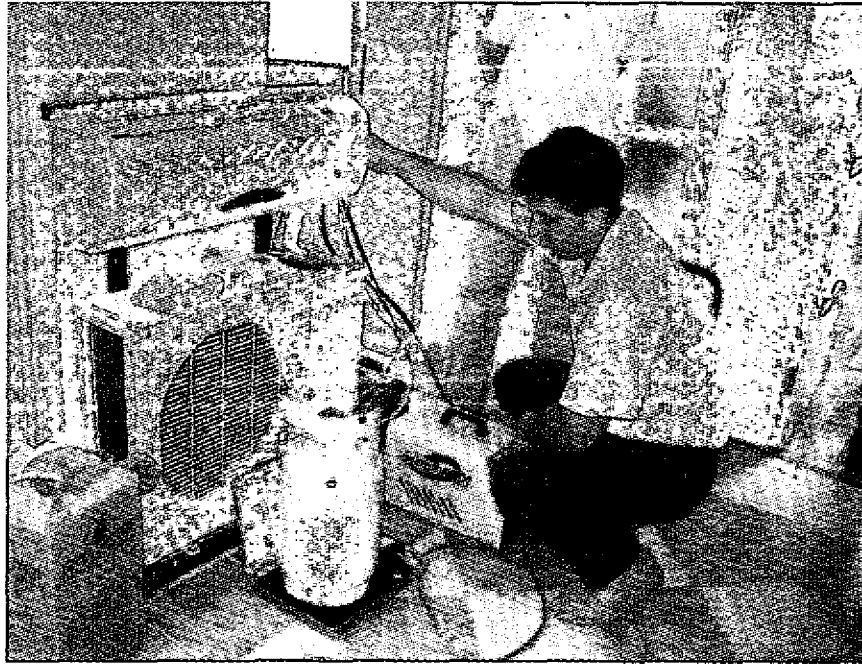
On June 2nd and 3rd, 2006, the first training course in “Good Practice in Refrigeration” for service technicians took place at the Center for Environmental Technologies, in Skopje. Thirteen participants were invited and attended the course.



Picture 4. Marin Kocov's presentation

List of participants:

No.	First and Last Name	Personal Identification No.	Service shop
1	Zakovski Blagoja	2610969450127	TERMO KING- Skopje
2	Bogoqub Stojanovski	0701962450170	TERMO KING- Skopje
3	Mile Krstevski	2207951450007	KLIMATEHNA- Skopje
4	Mitre Angelov	0810949450068	KLIMATEHNA- Skopje
5	Bogosav Jakovleski	2708945450088	KLIMATEHNA- Skopje
6	Dobriovoe Tasevski	1105951450006	KLIMATEHNA- Skopje
7	Gorgi Donev	2312976450077	KLIMATEHNA- Skopje
8	Vlatko Ognjanovski	0201982450034	KLIMATEHNA- Skopje
9	Aleksandar Jovanovski	2601980450059	KLIMATEHNA- Skopje
10	Miroslav Maliskovic	2003986450064	KLIMATEHNA- Skopje
11	Pavle Pavlovski	0212977450060	KLIMATEHNA- Skopje
12	Stojkov Saso	1911978450071	KLIMATEHNA- Skopje
13	Pavlovski Peco	0509960450124	DPTU PRESEK Ltd - Skopje



Picture 5. Practical part of the training

Mr. Milan Demko, project manager from UNIDO Vienna, attended the training course. The training took place in two phases – theoretical and practical. Each participant received a Training Manual and CD. The practical part was used along side the application of R&R equipment with especially prepared air conditioning unit – split system. Upon familiarizing with equipment, the participants moved on to the practical aspect of handling. Each participant received a Certificate for successful completion of the training.

Second training course

On October 28th and 29th, 2006, the second training course in “Good Practice in Refrigeration” for service technicians took place at the Vocational Secondary School “Mihajlo Pupin”, in Skopje. Sixteen participants were invited and attended the course.

List of participants:

No.	First and Last Name	Personal Identification No.	Service shop
1	Slave Adzievski	2201976450119	FONKO- Skopje
2	Sasko Gocevski	3110973450027	FONKO- Skopje
3	Igor Stojanovski	1406976450051	FONKO- Skopje
4	Dejan Ilievski	1406974450100	FONKO- Skopje
5	Dragoslav Milosavlevski	2407983470009	FONKO- Skopje
6	Sasko Velkovski	1403983450009	FONKO- Skopje
7	Zoran Nikolovski	2909974450076	FONKO- Skopje
8	Kiril Danevski	0810933450093	FONKO- Skopje
9	Zoran Velkovski	0805969450133	FONKO- Skopje
10	Trifun Gjorgievski	0502960420026	FONKO- Skopje
11	Bojan Trajkovski	0502976460200	FONKO- Skopje
12	Goce Milevski	0908986450051	FONKO- Skopje
13	Oliver Stefanovski	0410974450104	FONKO- Skopje
14	Vlado Radeski	3103977450009	FONKO- Skopje
15	Filip Djambazov	0610982450112	FONKO- Skopje
16	Vase Jakimovski	0503952450087	FONKO- Skopje

Third training course

On November 3rd and 4th, 2006, the third training course in "Good Practice in Refrigeration" for service technicians took place at the Technical Secondary School "Gjorgi Naumov", in Bitola. Eighteen participants were invited and attended the course.

List of participants:

No.	First and Last Name	Personal Identification No.	Service shop
1	Toni Talevski	2805961410024	PJER KOMPANI- Bitola
2	Nikola Trajkovski	2911979410069	ENERGOPROM- Bitola
3	Jovan Trajkov	2204982410047	ENERGOPROM- Bitola
4	Jove Brglevski	3108971410031	ENERGOPROM- Bitola
5	Goce Georgievski	2712985410000	ENERGOPROM- Bitola
6	Oliver Ilievski	1505965410048	FRIGOMA- Bitola
7	Nikolce Konevski	2502964410022	FRIGOMA- Bitola
8	Aleksandar Konevski	0104985410003	FRIGOMA- Bitola
9	Dimitar Siljanovski	0908963410001	M.T.A- Bitola
10	Gjorgi Vasev	1107967410007	ELEKTROFRIGO- Bitola
11	Tome Gacovski	0804961410028	GACO Dooel- Bitola
12	Stevo Korunovski		FRIGOMONT- Bitola
13	Ljupco Gagalovski	2408964410018	LIT-ELEKTRONIK- Bitola
14	Malik Orhan	2609968410042	TEHNOPRIMA- Bitola
15	Aleksandar Cvetkovski	1111971410019	AJS KOMERC- Bitola
16	Vasil Sokolovski	2801963470010	KONCAR- Bitola
17	Igor Filipovski	1507973440013	FRIGOFIL - Prilep
18	Ljupco Krstevski	0107954440035	CHAMPION- Prilep

Fourth training course

On November 16th and 17th, 2006, the fourth training course in "Good Practice in Refrigeration" for service technicians took place at the Vocational Secondary School "Mihajlo Pupin", in Skopje. Eighteen participants were invited and attended the course.

List of participants:

No.	First and Last Name	Personal Identification No.	Service shop
1	Ljupco Maslarkov	0809959450007	KONTAKT 2000
2	Tasko Bozinovski	2110955450059	KONTAKT 2000
3	Krume Petrushevski	0202968450176	KONTAKT 2000
4	Zoran Vasilev	2601977450048	KONTAKT 2000
5	Dejan Pavlevski	2601976450141	KONTAKT 2000
6	Slobodan Filipovski	1804978450097	KONTAKT 2000
7	Goran Gjorgiev	1805985450046	KONTAKT 2000
8	Dragan Stojanov	1011974450084	KONTAKT 2000
9	Dragi Ninovski	3003960450027	KONTAKT 2000
10	Goran Antovski	2202979450035	KGL SYSTEMS
11	Dejan Todorovski	0402973450086	KGL SYSTEMS
12	Dejan Tosev	0406975494507	KGL SYSTEMS
13	Mile Stevkovski	1102986450077	KGL SYSTEMS
14	Dusan Petrushevski	2204947450079	PIVARA
15	Vladimir Radenkovski	2005966450095	PIVARA
16	Dejan Gavrovski	0106975450212	PIVARA
17	Danco Petrushevski	1008977450076	PIVARA
18	Zoran Ristovski	1201980480002	FONKO



Picture 6. Presentation by Nikola Stojanovski

Fifth training course

On November 24th and 25th, 2006, the fifth training course in “Good Practice in Refrigeration” for service technicians took place at the Vocational Secondary School “Zlate Malakovski” in Gostivar. Thirteen participants were invited and attended the course.

List of participants:

No.	First and Last Name	Personal Identification No.	Service shop
1	Gzim Osmani	0802964473012	ARISTON- Vrapciste
2	Hamit Sabani	0805953470001	AEG - Gostivar
3	Slave Angelkovski	1001950473037	VARDAR - Gostivar
4	Mitre Angelkovski	2610956477047	VARDAR - Gostivar
5	Goce Angelkovski		VARDAR - Gostivar
6	Refik Odai	0105967470089	EURO ELEKTRIKA-Tetovo
7	Fatmir Dehari	0702982470034	EURO ELEKTRIKA-Tetovo
8	Ergul Ceci	0102974473027	KONTI -Gostivar
9	Hasan Rizvance	2006960473014	TESLA - Gostivar
10	Hadis Sarixe	1506975473044	FRIGO - Gostivar
11	Vajdin Elezi		ELEKTRO - DINI- Debrase
12	Ibrahim Ziberi	2109964470021	ELEKTRA - Tetovo
13	Musani Erol	2908877473003	Auto Elektrik - Gostivar

Recovery and recycling scheme

Receipt of the equipment in accordance with the specifications outlined by the project

On April 13th, 2006, a large amount of the equipment was received and stored (recovery machines, vacuum pumps, service cylinders and aggregates for nitrogen production). The producer ARIAZONE delivered the rest of the equipment according to the project specification on June 7th, 2006. The equipment was stored in a storage facility and is ready for future distribution.

The list of Inventory of the received equipment with specific data (Description and Serial No) was given to the NOU.

Local arrangement of the R&R equipment

During October - November 2006 the Center for Environmental Technologies prepared and packed the equipment and organized delivery of the R&R equipment to the selected vocational secondary schools. User manuals for the equipment were also given to the schools.

List of vocational secondary schools that received the equipment:

No	Technical Secondary School	Address	Director	Tel No
1	SOU "Goso Vikentiev"	29 Noemvri, 2300 Kocani	Nikola Savev	389 33 294247 389 33 294001
2	DSTU "Nace Buxoni"	1300 Kumanovo	Dimitar Docevski	389 901 34 235
3	SSOU "Kole Nedelkovski"	Andon Surkov br.4 1400 Veles	Goce Aleksovski	
4	DSEMU "Riste Rickovski Ricko"	Tocila bb, 7500 Prilep	Ceselkoski Petre	389 48 414 447 389 48 415 376
5	DSEMU "Gorgi Naumov"	Partizanska bb, 7000 Bitola	Donka Kotevska	389 47 258707 398 47 258065
6	SOU "Kole Nehtenin"	Goce Delcev 101, 2000 Stip	Jane Milanov	389 32 391384
7	CSNO "Zlate Malakoski"	1230 Gostivar	Djaferi Nexadin	389 42 214133
8	DETU "Mihajlo Pupin"	Blagoja Stefkovski bb, 1000 Skopje	Eftim Pejovski	389 2 2529720
9	EMUC "Sv. Naum Ohridski"	6000 Ohrid	Bosko Siljanovski	389 46 266 142 389 46 262174

Training courses for Customs officers

The first meeting with the Customs authorities was held on February 1st, 2006. They were informed about the planed training of the Customs officers in the framework of TPMP.

The second meeting with the Customs authorities was held on November 30th, 2006. The meeting took place at the Customs Headquarters with Mrs. Elizabeta Nikolovska, assistant director and Mrs. Julijana Ristovska, head of training department. The conclusion was that the training courses for Customs officers will start mid of December 2006. The Training department of Customs Headquarters will prepare Time Schedule for execution of the courses.

The first training course took place at border entry point Tabanovce on December 13th, 2006. Seventeen participants attended the course.

List of participants is given in the Table below.

No	First and Last Name	Personal Identification No.	Customs unit
1	Zoran Ilievski	2905970424016	Deve Bair
2	Robert Stefanovski	0707972424001	Deve Bair
3	Goran Georgievski	2103967424006	Deve Bair
4	Zoran Stoilkovski	2306970424007	Deve Bair

No	First and Last Name	Personal Identification No.	Customs unit
5	Andrijana Petrova	2507976425027	Deve Bair
6	Oliver Aleksovski	2311963424003	Deve Bair
7	Vera Naseva	1511975425051	Kumanovo
8	Anita Nedeljkovik	0712967425001	Kumanovo
9	Snezana Stojkovska	1712960425026	Tabanovce – Railway Station
10	Tihomir Milkovski	2109980420026	Tabanovce – Railway Station
11	Saso Garevski	1404965420026	Pelince
12	Samet Idrizi	1609971420004	Tabanovce - Road entry point
13	Goran Milenkovski	2102968420008	Tabanovce - Road entry point
14	Kire Velickovski	2601976420048	Tabanovce - Road entry point
15	Aleksandar Pop Arsov	3103982420037	Tabanovce - Road entry point
16	Kostadin Dimanovski	1808971420031	Tabanovce - Road entry point
17	Marijan Kitanovski	0211963420022	Tabanovce - Road entry point

Agenda for the training course:

- 10⁰⁰ – 10⁴⁵ Ozone Depletion - controlled substances under the Montreal Protocol
- 10⁴⁵ – 11¹⁵ National strategy for ODS phase-out, National Legislation
- 11¹⁵ – 11³⁰ Coffee break
- 11³⁰ – 12³⁰ Prevention of illegal trade, movie EIA
- 12³⁰ – 13⁰⁰ Lunch
- 13⁰⁰ – 13⁴⁵ Identifying ODS
- 13³⁰ – 14⁰⁰ Coffee break
- 14⁰⁰ – 15⁰⁰ Discussion

List of lecturers:

- Marin Kocov, NOU, topic “Ozone Depletion - controlled substances under the Montreal Protocol”;
- Emilija Kupeva-Nedelkova, topic “National strategy for ODS phase-out, National Legislation”
- Nikola Stojanovski, CET, topic “Prevention of illegal trade”;
- Josif Blagoevski, CET, topic “Identifying ODSs”;



Picture 7. Training of Customs officers

Monitoring of the TPMP

Most of the activities performed by the Center for Environmental Technologies were monitored by Mr. Milan Temelkovski.



Picture 8. Monitoring of the activities by Milan Temelkovski

Summary and comments

In the first year of the implementation of the TPMP 24 professors from the Vocational secondary schools and 78 service technicians and 17 customs officers were trained.

After completion of this part of the training courses, the NOU has possibility to organize delivery of R&R equipment to service shops.

The Training will continue in the next year according the ToR of the project TPMP.

Center for Environmental Technologies

Date: 14.12.2006

Aleksandar Trazoff
General Manager

