PN-ACH-482
104622

SLOVAKIA DELIVERABLE –
Seminar to Disseminate Results of Energy Efficiency Demonstration Project

PREPARED BY:

Arlington, Virginia USA

PREPARED FOR:

United States Agency for International Development
Bratislava, Slovakia and Washington, DC
Regional Energy Efficiency Project (180-0030)
Contract No. DHR-C-00-95-00064-00

19 August, 1999

SEMINAR TO DISSEMINATE RESULTS OF ENERGY EFFICIENCY DEMONSTRATION PROJECT

The seminar was held on May 27, 1999 in Bratislava.

About 30 people, from municipalities throughout Slovakia, participated. Participants included representatives of: district heating companies; municipalities; local condominium associations; the Slovak government (Ministry of Economy and Parliament); and district heating engineering consultants.

The seminar included the following prepared lectures:

- Introduction by Ms. Jaroslava Zapletalova, in which she described the current status of district heating prices and subsidies.
- Presentation by Mr. Josef Urmin, head of Energy Pricing and Policy for the Slovak Ministry of Economy, on the government's current and planned policies related to heat supply.
- Lecture by a representative of the municipality of Martin describing the work that is currently being done by a special working group (that is advisory to the Ministry of Finance). The working group's charter is to assist MOF with developing viable procedures for transferring heat supply responsibilities from the state government to the municipalities.
- Lecture by representative of the Slovak Energy Agency regarding the current status and viability of energy performance contracting as a vehicle for funding heating energy efficiency and modernization projects in Slovakia.
- Lecture by Jennifer Fagan describing energy efficiency projects addressing district heating facilities and buildings in other countries of Central and Eastern Europe.
- Lecture by Mr. Pis of the city of Handlova describing the grueling 7-year process they have been involved in to modernize the district heating system there.

Lectures by Mr. Dragun and Mr. Pitak of Thermoservis describing the energy efficiency demonstration project in Kosice. Mr. Dragun's presentation addressed the design of the project. Mr. Pitak described the implementation of the project and presented some preliminary estimates of energy savings and payback, based on metered data collected during the 1998-99 heating season. Calculations from metered data before and after project implementation demonstrate a decrease in energy use of 46.5%, which is much higher than the original savings estimate of 29%.

HIGHLIGHTS OF THE MOST INTERESTING LECTURES ARE AS FOLLOWS:

Ministry of Economy (Mr. Urmin)

- Mr. Urmin provided many statistics on the district heat industry: production levels, costs, impact on balance of trade, impact on the state budget, etc.
- He also discussed the government's goal of phasing out price subsidies to households for heat, electricity and gas. He provided information on electric and gas price levels and 1998 profit levels.
- He explained the government's policy to promote cogeneration as a future source of heat supply. (Note – for most municipal heat producers, cogeneration does not make sense, because they do not have a franchise for the sales of electricity. It must be considered on a case-by-case basis.)
- He said the current, very low price of gas for heat producers is sending the equipment now, based on current gas prices. This may prove to be an uneconomic choice when gas prices are increased significantly in the future to reflect world price levels.
- He described the government's current thoughts on restructuring and privatizing the electric industry. They are proposing to separate generation, transmission and distribution, and establish joint stock companies as owners of distribution companies. Generation and transmission will continue to be state-owned. With regard to heat supply, the government's policy is to municipalize the industry and eliminate price subsidies from the state budget.

City of Martin (Representative on MOF working group)

- The working group is developing recommendations addressing policies and procedures to facilitate the transfer of heat responsibility from the state to the municipal level.
- Regarding subsidies, the subsidy budget was reduced 60% in 1998. Heat producers are hurting financially from the cuts in subsidies. The government's method for reallocating the reduced subsidy level was based on a common cost per GJ for all heat producers. Some had heat costs below this level and didn't need subsidies but received them anyway; others' costs were much higher. The committee recommended an alternative method, wherein the level of subsidies previously provided to each producer is reduced proportionately.
- Accelerated depreciation has proved to be a major component of heat costs. The committee suggests changing the accelerated depreciation schedule from four years to eight years to mitigate the impact of this policy.
- The committee needs to address the problems of consumer nonpayment of heat bills and related insolvency of heat producers. These problems are rising. If these problems are not resolved this summer, there will be significant hardships this winter from increased incidence of insolvency of heat producers.

Slovak Energy Agency

- The SEA representative described the history of energy performance contracting (EPC) in Slovakia as a method of financing energy efficiency projects. He also described the current problems with EPC that result from the significant reduction in the subsidy level.
- During 1995-1996, the government first became interested in using EPC as a method of financing energy savings projects. They recognized that EPC could solve the problem of lack of project financing that existed at that time.
- A total of 16 projects have been developed to-date that use EPC to finance the projects. Unfortunately, these projects are on shaky ground now, due to the reduction in the subsidy. Up until 1998, the subsidy revenues have served as a source of hard currency that has been used to pay off the loan for the project. With the reduction, this revenue source is greatly reduced and many project borrowers are in danger of defaulting on their performance contracts. Given the reduction in subsidies, the use of EPC is no longer viable – as demonstration of this, during 1998, only one project was implemented using EPC.
- Note – the elimination of subsidies leads to increased heating prices for households. These higher prices should provide the same or higher level of cash flow as with subsidies. Unfortunately, they have not. Instead, as prices have been increased, the rate of nonpayment by households has grown significantly.

City of Handlova

- Mr. Pis of the city of Handlova explained the reasons why modernization of Handlova's district heating generation facilities has been so difficult and time-consuming. They seem to have encountered every type of problem or barrier in their quest to upgrade, including the following:
  - There are two owners of their district heat facilities, SE, which owns the primary distribution pipeline, and the municipality, which owns the distribution network. Negotiations with SE have been very contentious. After 5 years of negotiations, SE withdrew from the project unexpectedly and said the city should solve the technical problems alone.
  - The cost of renovation has exceeded their borrowing power up to this point.
  - They did not have the expertise needed to evaluate options and move the project forward.
  - There has been much political pressure to continue to use domestic coal in the new plant, to preserve local jobs and reduce reliance on imported fuel. But gas is a much more logical choice, because it is cleaner, less expensive and more efficient than lignite.
  - There is a huge debt between the municipality and the heat plant. The municipality's arrears over the last 2+ years exceed 70 million Sk. They are trying to resolve how to settle the debt, since the municipality cannot afford to pay it off right now.
  - There has been no legislative support.

- A detailed study was done a few years ago, addressing technical solutions. The focus of the study was on building a new gas-fired heat plant. EGU, the R&D arm of the Slovak government, blessed the results of the study, and the decision to use gas instead of lignite.
- During this time of indecision, Handlova's heat cost has risen to 510 Sk. per GJ, making it one of the highest cost producers in the country. This cost is about double the national average cost per GJ.
- Three months ago, Handlova found a German investor to fund and implement the project. They are now preparing the contracts needed to launch the project.
- The new plant must be built by October of 2000 and there are still many obstacles to overcome. Still, they are optimistic about the outcome.

In addition to the lectures, there was extensive, emotional discussion by the participants of the difficult issues currently facing district heating producers, municipalities, and end-users. It is clear that the current technical and financial problems are creating significant hardships for both producers and consumers. The period of transition to full cost-based prices will be very difficult for many and may take much longer than the 2-3 years that the government has planned for.

APPENDIX A:

PARTICIPANTS LIST

A 14

Prezenčná listina účastníkov pracovného seminára o zásobovaní teplom a šetrení energiou - Bratislava (Charlie centrum) 27. mája 1999

por.č.	Meno a priezvisko	Funkcia	Organizácia	Podpis
1.	RNDr. Ladislav Ambróš	predseda výboru NR SR	NR SR **Bratislava**	
2	Ing. Árgyusi	viceprimátor	Mestský úrad **Kolárovo**	
3	Ing. Ladislav Bartakovič	primátor	Mestský úrad **Rimavská Sobota**	
4	Ing. Ján Babej	primátor	Mestský úrad **Šamorín**	
5.	Vladimír Baláž	viceprimátor	Mestský úrad **Nitra**	
6	Ing. Ladislav Balga		Termex s.r.o. **Veľký Krtíš**	
7.	Ing. Ľubomír Bernát	primátor	Mestský úrad **Vrútky**	
8	Ing. Stanislav Bernát	primátor	Mestský úrad **Martin**	
9	Peter Benčő	primátor	Mestský úrad **Jelšava**	
10	PhDr. Ľubomír Bláha	primátor	Mestský úrad **Dolný Kubín**	
11	Ing. Štefan Bošnák	primátor	Mestský úrad **Trnava**	
12.	Ing. Ján Brezovský	primátor	Mestský úrad **Hlohovec**	
13.	RNDr. Peter Dobeš	primátor	Mestský úrad **Rajecké Teplice**	
14	Otto Doviak	starosta	Obecný úrad **Ľubica**	
15	JUDr. Juraj Čech	primátor	Mestský úrad **Ružomberok**	
16	Ing. Pavol Čiernik	primátor	Mestský úrad **Hava**	
17	Miroslav Chovanec	starosta	Obecný úrad **Turie**	
18.	Ing. Jozef Elšík	primátor	Mestský úrad **Senec**	
19.	Dušan Fedoročko	poslanec NR SR	NR SR **Bratislava**	
20	František Grohola	primátor	Mestský úrad **Kežmarok**	
21.	Rudolf Gonda	primátor	Mestský úrad **Hriňová**	
22.	Ing. Jozef Hrnčírik	viceprimátor	Mestský úrad **Holíč**	
23.	JUDr. Marius Hrno v z. Prišče	primátor zástupca pri	Mestský úrad **Žiar nad Hronom**	
24	Ing. Dušan Janáč		Termokonzult s.r.o **Bratislava**	
25.	RNDr. Valent Jaržembovský	primátor	Mestský úrad **Stará Ľubovňa**	

por.č.	Meno a priezvisko	Funkcia	Organizácia	Podpis
26	**Jurčáková Zdenka**	prezidentka	**Združenie** spoločenstiev vlastníkov bytov **Košice**	
27.	**Jozef Jurina**	starosta	Obecný úrad **Rastislavice**	
28.	**JUDr. Leo Kabina**	poslanec MZ	MZ **Zvolen**	
29	**Ing. Milan Kanda**	primátor	Mestský úrad **Holíč**	
30.	**Ing. Ladislav Kisely**	primátor	Mestský úrad **Levice**	
31	**Ing. Juraj Kopčák**	primator	Mestsky urad **Prešov**	
32.	**Ing. Michal Kotrady**	starosta	Obecný úrad **Smižany**	
33.	**Ing. Štefan Kubík**	primátor	Mestský úrad **Poprad**	
34	**Jozef Krumpolec**	poslanec NR SR	NR SR **Bratislava**	
35	**Ing. Ľubomír Krajčovič**		Správa mestského majetku **Trnava**	
36.	**Ing. Ján Králik**	primátor	Mestský úrad **Banská Bystrica**	
37.	**Ing. Peter Korec**	primátor	Mestský úrad **Bytča**	
38	**JUDr. Samuel Lojkovič**	primátor	Mestský úrad **Veľký Meder**	
39	**Ing. Mašlániová Alena**		Tebys s r.o. **Trenčín**	
40	**Ing. Jozef Mažári**	primátor	Mestský úrad **Trstená**	
41.	**RSDr. Mesiarik Marián**	**poslanec NR SR**	NR SR **Bratislava**	
42.	**Ing. Vladimír Medlen**	primátor	Mestský úrad **Modra**	
43.	**Ing. Karol Mitrík**	primátor	Mestský úrad **Spišská Nová Ves**	
44	**Ing. Jozef Mikuš**	viceprimátor	Mestský úrad **Zvolen**	
45.	**Ing. Peter Mladý**	primátor	Mestský úrad **Sabinov**	
46	**Mgr. Július Morávek**	primátor	Mestský úrad **Šaľa**	
47.	**László Molnár**		USAID **Bratislava**	
48	**JUDr. Jozef Moravčík**	primátor	Magistrát hl. m **Bratislava**	
49	**RNDr. Peter Moško**	primátor	Mestský úrad **Nová Baňa**	
50	**Ing. Milan Muška**	primátor	Mestský úrad **Vranov nad Topľou**	
51	**RNDr. Jozef Ondrejka**	primátor	Mestský úrad **Malacky**	
52.	**Ing. Miroslav Nárožný**	primátor	Mestský úrad **Kremnica**	

por.č.	Meno a priezvisko	Funkcia	Organizácia	Podpis
53.	**PaeDr. Teodor Nagy**	primátor	Mestský úrad **Vráble**	
54	**Ing. Alžbeta Nováková**	odd. cenovej politiky	Ministerstvo financií SR **Bratislava**	
55	**Ing Anton Novotný**	riaditeľ sekcie výstavby	Ministerstvo výstavby a verejných prác SR **Bratislava**	
56.	**Ing. Miroslav Obživaný**	generálny riaditeľ	Marrieo s.r.o. **Martin**	
57.	**RNDr. Jozef Ondrejka**	primátor	Mestský úrad **Malacky**	
58	**Mgr. Gabriel Ondrovič** ING-GAJDUA	primátor	Mestský úrad Starý Smokovec **Vysoké Tatry**	
59.	**Mgr. Ján Oravec**	primátor	Mestský úrad **Štúrovo**	
60.	**Ing. Štefan Pásztor**	primator	Mestský úrad **Komárno**	
61	**Ing. Peter Pázmány**	primátor	Mestský úrad **Dunajská Streda**	
62.	**Peter Pekarčík**	primátor	Mestský úrad **Levoča**	
63.	**Ing. Ivan Pessel**	primator	Mestský úrad **Pezinok**	
64	**Ing. Jozef Petráš**	primátor	Mestský úrad **Gbely**	
65	**Mgr. Ladislav Piovarči**	primátor	Mestský úrad **Leopoldov**	
66.	**Dušan Rybár**	primátor	Mestský úrad **Myjava**	
67.	**Ing. Ján Rybárik**	primátor	Mestský úrad **Rajec**	
68	**RSDr. Štefan Rusnák**	poslanec NR SR	NR SR **Bratislava**	
69	**Ing. Mária Sabolová**	poslankyňa NR SR	NR SR **Bratislava**	
70.	**Ing. Etela Sečová**	primátorka	Mestský úrad **Námestovo**	
71	**Ing. Pavol Segeš**	primátor	Mestský úrad **Topoľčany**	
72	**Ing. Boris Sopira**		Ministerstvo sociálnych vecí, práce a rodiny SR **Bratislava**	
73	**Ing. Milan Skyva**	primátor	Mestský úrad **Zlaté Moravce**	
74	**MUDr. Alexander Slafkovský**	primátor	Mestský úrad **Liptovský Mikuláš**	
75	**Albín Smolka**	starosta	Obecný úrad **Zázrivá**	
76	**Ing. Michal Srholec**	primátor	Mestský úrad **Skalica**	
77.	**Ing. Dalibor Surkoš**	primátor	Mestský úrad **Veľký Krtíš**	
78			Slovenský zväz bytových družstiev **Bratislava**	

por.č.	Meno a priezvisko	Funkcia	Organizácia	Podpis
79.	Štefan Hrnčík	[illegible]	Slovenská energetická agentúra **Bratislava**	
80.	**Milan Šefranik**	starosta	Obecný úrad **Práznovce**	
81	**Ing. Eva Šimková**	gen. riaditeľka sekcie daň. a colnej politiky	Ministerstvo financií SR **Bratislava**	
82.	**Ing. Rudolf Schuster**	primátor	Magistrát m. Košice **Košice**	
83	**Ing. Ján Štrbáň**	primátor	Mestský úrad **Púchov**	
84.	**JUDr. Štefan Tkáč**	poslanec **NR SR**	NR SR **Bratislava**	
85.	**Tóth Štefan**		Bytový podnik **Nové Zámky**	
86	**RsDr. Imrich Tóth**	primátor	Mestský úrad **Kolárovo**	
87	**Ing. Ján Trajčík**	gen.riaditeľ divízie ver.projektov	Prvá komunálna banka **Žilina**	
88	**Ing. Ján Turčan** BYTTHERM s.r.o.	primátor	Mestský úrad **Bánovce nad Bebravou**	
89	**Jozef Urmin**	riaditeľ odboru energetickej politiky	Ministerstvo hospodárstva SR **Bratislava**	
90.	**Ing. Valko**	námestník	SEZ **Žilinu**	
91	**Ing. arch. Viliam Valovič**		Spravbyt a.s. **Prešov**	
92	**Ľuboš Vagač**		Centrum pre hospodársky rozvoj **Bratislava**	
93.	**MUDr. Anna Záborská**	poslankyňa NR SR	NR SR **Bratislava**	
94	**JUDr. Margita Zemková**	primátorka	Mestský úrad **Hurbanovo**	
95	**Ing. Jozef Žiška**	primátor	Mestský úrad **Trenčín**	
96	**Ing. Ondrej Žakarovský**	primátor	Mestský úrad **Gelnica**	
97	Ing. Ivan Wlachovský	odborný poradca	úrad vlády SR	
98	Ing. Gabriela [illegible]	[illegible]	[illegible]	
99	[illegible]	[illegible]	[illegible]	
100	Ing. HRONCOVÁ [illegible]	[illegible]	ZSVB	
101	Peter Vajáčka	Mesto Levoča	L.T. a.s.	
102	František CHOVANEC	STAVBA	MBP	
103	Ladislav [illegible]	[illegible]	HOLDIX s.r.o.	
104	[illegible]	[illegible]	[illegible]	
105	[illegible]	[illegible]	INŠTITÚT [illegible]	

APPENDIX B:

ELECTROTEK'S PRESENTATION

Why Save Energy?

- Most measures pay for themselves through energy cost savings
- Impact of future increases in heating tariffs is less
- Benefits environment by reducing emissions
- Reduces energy imports and lessens dependency on other countries

Energy Use in Slovak Republic vs. Other Countries (Energy per GDP)

Country/Region	Energy Intensity
World	0.39
Slovak Republic	1.56
Western Europe	0.25
United States	0.34

(Based on 1995 data)

The Changing Environment in the Heat Supply Sector

- Heat prices for households are increasing
- Subsidies are being reduced
- Slovak government is considering a housing allowance program for lower income households to replace subsidies
- Energy efficiency can help to reduce impact of heating price increases

Energy Efficiency Measures for Residential Buildings

- Weatherization (to reduce infiltration and heat loss):
  - Insulation of roofs and walls
  - Weatherstripping of windows and doors
- Heating controls (to reduce overheating):
  - Automatic controls in heat center (basement)
  - Thermostatic radiator valves

Poland - Kracow Project

- USAID-funded project designed to:
  - Focus on affordable and effective energy efficiency measures
  - Reduce severe pollution in city of Kracow
  - Encourage the growth of the energy efficiency sector
- Measures installed: attic insulation, TRVs, weatherstripping, temperature controlled heat exchangers

Poland - Kracow Project

- Results:
  - Actual energy savings of over 20%
  - Simple payback of under 3 years
  - Significant reduction in emissions and heating loads
  - Elimination of 3,000 local boiler houses
  - Program widely replicated at other housing cooperatives

Ukraine - KIBA Project

- Project focuses on institutional buildings - government-owned
- Includes residential buildings, hospitals, clinics, schools, government offices
- World Bank to provide large loan ($40 to $60 million) to finance energy savings measures

Ukraine - KIBA Project

- Recommended energy efficiency measures:
  - Roof and floor insulation
  - Weatherstripping of doors and windows
  - Heating controls in buildings and heat substations
  - Thermostatic radiator valves
  - Balancing of heating system
- Savings of 30-40% and payback of 4 yrs.

Hungary - Residential/Institutional Sector

- Current heating prices very high
- Study by Budapest Technical University shows payback of 4 years or less on installing own boilers
- Difficult to install boilers in residential buildings - all residents must approve
- Also, local heat provider willing to negotiate lower tariffs

Bulgaria - Gabrovo Project

- World Bank project through Global Environmental Facility (GEF)
- Included residential component
- Institutional barrier to project implementation - no condominium association and no responsibility for common areas
- Project never implemented

Romania - Constanta Project

- Objective - to develop bankable energy savings project for city of Constanta
- Focus - energy efficiency improvements for schools and district heating substations
- Economic situation very difficult - high inflation and weak financial sector
- Loans unavailable through local banks

Romania - Constanta Project

- Underheating problem in schools
- Measures evaluated - pipe insulation, weatherstripping, heating controls
- Estimated paybacks - five to 10 years
- Measures considered for social reasons

General Conclusions from Regional Energy Efficiency Projects

- Cost-effective measures include:
  - Roof insulation (exterior)
  - Heating controls
  - Weatherstripping and caulking
- Typical energy savings - 20 to 30%
- Non cost-effective measures:
  - New windows or doors
  - Wall insulation

Observations for Slovak Republic

- Housing sector very well-positioned to develop energy efficiency projects
- New condominium associations remove institutional barriers
- Heating price increases will make projects more attractive (financially)
- Access to special funds or reasonable bank financing a reality