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

PREPARED BY:



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PREPARED FOR:

**United States Agency for International Development
Bratislava, Slovakia and Washington, DC
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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.

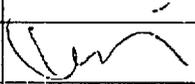
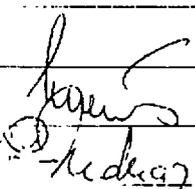
City of Handlova

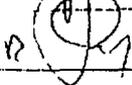
- Mr. Pis of the city of Handlova explained the reasons why modernization of Handlova's district heating generation facilities has been so difficult and time-consuming. They seem to have encountered every type of problem or barrier in their quest to upgrade, including the following:
 - There are two 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**

por.č.	Meno a priezvisko	Funkcia	Organizácia	Podpis
26.	Jurčáková Zdenka	prezidentka	Združenie spoločenstiev vlastníkov bytov Košice	
27.	Juzef Jurim	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	primátor	Mestský úrad 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 Mažari	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 Mitrik	primátor	Mestský úrad Spišská Nová Ves	
44.	Ing. Jozef Mikuš	viceprimátor	Mestský úrad Zvolen	
45.	Ing. Peter Mlatý	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.	PacDr. Teodor Nagy	primátor	Mestský úrad Vráble	
54.	Ing. Alžbeta Nováková	odd. cenovej politiky	Ministerstvo finančn SR Bratislava	
55.	Ing. Anton Novotný	riaditeľ sekcie výstavby	Ministerstvo výstavby a verejných prác SR Bratislava	
56.	Ing. Miroslav Ohlívaný	generálny riaditeľ	Martec s.r.o. Martin	
57.	RNDr. Jozef Ondrejka	primátor	Mestský úrad Malacky	
58.	Mgr. Gabriel Ondrovič <i>RU ING. GAJDUA</i>	primátor	Mestský úrad Starý Smokovec Vysoké Tatry	<i>ru gajda</i>
59.	Mgr. Ján Oravec	primátor	Mestský úrad Štúrovo	
60.	Ing. Štefan Pásztor	primátor	Mestský úrad Komárno	<i>in Pásztor</i>
61.	Ing. Peter Pázmány	primátor	Mestský úrad Dunajská Streda	
62.	Peter Pekarčík	primátor	Mestský úrad Levoča	
63.	Ing. Ivan Pessel	primátor	Mestský úrad Pezinok	
64.	Ing. Jozef Petráš	primátor	Mestský úrad Gbely	
65.	Mgr. Ladislav Piovarčí	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 Herich	amb. zamestnanec	Slovenská energetická agentúra Bratislava	<i>[Signature]</i>
80.	Milan Šefraník	starosta	Obecný úrad Práznovce	<i>[Signature]</i>
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 Trajšík	gen. riaditeľ divízie ver. projektov	Prvá komunálna banka Žilina	
88	Ing. Ján Turčan BYTTIKER 17 12	primátor	Mestský úrad Bánovce nad Behravou	<i>[Signature]</i>
89	Jozef Urmin	riaditeľ odboru energetickej politiky	Ministerstvo hospodárstva SR Bratislava	<i>[Signature]</i>
90.	Ing. Valko	námestník	SEZ Žilina	
91	Ing. arch. Viliam Valovič		Spravbyt a.s. Prešov	<i>[Signature]</i>
92	Luboš 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 Žižka	primátor	Mestský úrad Trenčín	
96	Ing. Ondrej Žakarovský	primátor	Mestský úrad Gelnica	
97	Ing. Ivan Wlachowski	odborný poradca	úrad vlády SR	<i>[Signature]</i>
98	Ing. Gabriela Žitňanská	EVCH. MANAGER	C. TRAVEL BRATISLAVA	<i>[Signature]</i>
99	Ing. Jozef Kováčik	úpr. zos. ved. inž.	AgriEnergy s.r.o. Bratislava	<i>[Signature]</i>
100	Ing. HROŇOVÁ VĽAČKA	pr. p. RL	ZSVB	<i>[Signature]</i>
	<i>Melha</i>			<i>[Signature]</i>
101	Peter Kapáček	Mesto Košice	L.T. a.s.	<i>[Signature]</i>
102	Franzisko CHOJANEC	SULFA	MBP	<i>[Signature]</i>
103	Jozef Lulaj	HOVIC	HOVIC s.r.o.	<i>[Signature]</i>
104	Pavol Ján	predn. MUV	MANAGER	<i>[Signature]</i>
105	JAROSLAV ZAPLETANÝ	KONZULTANT	INSTRIT BRATISLAVA	<i>[Signature]</i>

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)

<u>Country/Region</u>	<u>Energy Intensity</u>
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