



**USAID**  
FROM THE AMERICAN PEOPLE

**MUNICIPAL HEATING  
REFORM IN UKRAINE**

# MUNICIPAL HEATING REFORM PROJECT (MHR)

**Report on Results of Express Assessment of  
Performance Indicators of Twenty Nine  
Heating Enterprises in Partner Cities of the  
USAID Municipal Heating Reform in Ukraine  
Project**

**July 2010**

This document was produced for review by the United States Agency for International Development (USAID).  
It was prepared by the Municipal Development Institute within the USAID Municipal Heating Reform Project in Ukraine.

# MUNICIPAL HEATING REFORM PROJECT (MHR)

## **Report on Results of Express Assessment of Performance Indicators of Twenty Nine Heating Enterprises in Partner Cities of the USAID Municipal Heating Reform in Ukraine Project**

ENERGY II IQC, TASK ORDER 9  
Contract: EPP-I-00-03-00006-00

July 2010

This document was made possible through support provided by the U.S. Agency for International Development. The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

**TABLE OF CONTENTS**

Introduction .....	4
1. General description of the report's structure and the express assessment methodology .....	6
2. Assessment of the number of staff and its structure .....	8
2.1 Specific indicators of the number of staff .....	8
2.2 Structure of the staff .....	9
3. Assessment of production capacities of the enterprises and their energy efficiency .....	11
3.1 Specific thermal energy supply for consumers .....	11
3.2 The structure of thermal energy supply for consumers .....	12
3.3 Losses of thermal energy .....	13
3.4 Specific use of fuel and electricity for technological needs .....	13
4. Key financial indicators .....	16
4.1 Profitability .....	16
4.2 Level of costs compensation and actual prime cost .....	17
4.3 Structure of operational costs (heating) .....	18
4.4 Fees collection level .....	21
4.5 Liquidity .....	22
5. Assessment of capital investment volumes and the structure of their funding sources .....	24
6. Aggregation of result of pilot enterprises' performance assessment .....	27
6.1 Rating assessment by quantity indicators .....	27
6.2 Rating assessment by energy efficiency indicators .....	28
6.3 Rating assessment by solvency indicators .....	29
7. Conclusions and recommendations regarding technical assistance directions .....	32
ANNEXES .....	43

## Introduction

Within the framework of the USAID Municipal Heating Reform in Ukraine Project (hereinafter – MHR) provision of technical assistance to partner cities is planned in the spheres of business planning, project funding and improvement of business processes and pricing.

For assessment of the status of heating enterprises and, accordingly, defining directions for providing technical assistance within the framework of the project, a study of performance indicators of enterprises in partner cities was conducted based on results of 2009, which are generalized in this analytical report.

For participation in the MHR project, 36 cities were selected: Alchevsk, Vinnytsya, Voznesensk, Dzhankoy (ARC), Dolyna, Yevpatoriya (ARC), Ivano-Frankivsk, Kamyanyets-Podilsky, Kovel, Komsomolsk, Korosten, Kramatorsk, Krasnoperekopsk (ARC), Kremenchuk, Kupyansk, Kurahove, Lutsk, Lviv, Mohyliv-Podilsky, Myrhorod, Nikopol, Novograd-Volynsky, Pavlograd, Poltava, Romny, Rivne, Rubizhne, Sevastopol (ARC), Simpheropol (ARC), Slavutych, Kherson, Khmelnytsky, Chervonograd, Chernivtsi, Chernihiv, Chuhuiv.

For the purpose of obtaining input data for drafting of this report, queries for provision of information needed for realization of the express assessment of their performance were sent to enterprises of the 36 partner cities of the MHR project. In accordance with the query, the enterprises were to provide copies of financial and statistical reporting in accordance with the list and the filled in questionnaire.

32 enterprises provided information. Among them, the enterprise of the city of Kamyanyets-Podilsky appeared to be a newly formed enterprise, and enterprises of the towns of Kupyansk and Yevpatoriya are structural subdivisions of the enterprises ESCE "Administration for Development of the Territory's Infrastructure" and HE "KrymTeploKomunEnergo", respectively. As the enterprises of the towns of Kupyansk and Yevpatoriya do not have the status of legal entities, they did not draft financial or statistical reporting for 2009. For these reasons, these enterprises were not included into the list of enterprises based on whose data the express assessment was conducted.

The enterprises of the cities of Dzhankoy, Dolyna, Mohyliv-Podilsky, Rubizhne, Slavutych, Poltava, Kurahove did not respond to the request and did not provide the necessary information.

Thus, the total number of the enterprises based on whose performance results the express evaluation was conducted makes up 29.

Since in each of the cities of Kramatorsk, Rivne, Romny, Khmelnytsky two enterprises were selected for participation in the project and among other cities there are such where several heating enterprises function, use of abbreviated names of the enterprises is foreseen in this report. The list of enterprises and their names' abbreviations are shown in table 1.

This report based on results of the conducted express assessment of performance indicators of enterprises in partner cities of the MHR project was prepared by the consultants of the AUCCO "Municipal Development Institute" Alyona Babak, Natalia Alekseeva, Roman Zherdytsky.

Table 1

## List of pilot enterprises of partner cities

City	Full name of the enterprise	Abbreviation in the report
Alchevsk	Communal heating enterprise "AlchevskTeploKomunEnergо"	Alchevsk TKE
Vinnytsya	Communal enterprise of Vinnytsya city council "VinnytsyaMiskTeploEnergо"	Vinnytsya MTE
Voznesensk	Communal enterprise "Teplo-Service" of Voznesensk city council	Voznesensk TS
Ivano-Frankivsk	State municipal enterprise "Ivano-FrankivskTeploKomunEnergо"	I.-Frankivsk TKE
Kovel	Heating networks enterprise "KovelTeplo"	KovelTeplo
Komsomolsk	Communal production enterprise "KomsomolskTeploEnergо"	Komsomolsk TE
Korosten	Communal enterprise "TeploZabezpechennya"	Korosten TZ
Kramatorsk	Oblast communal enterprise "DonetskTeploKomunEnergо", production unit "KramatorskMizhrayTeploMerezha"	Kramatorsk MRT
	Communal production enterprise "Kramatorska Teplomerezha" of Kramatorsk city council	Kramatorsk TM
Krasnoperekopsk	Communal heating networks enterprise of Krasnoperekopsk town	Krasnoperekopsk CHNE
Kremenchuk	Communal enterprise "TeploEnergо"	Kremenchuk TE
Lutsk	State communal enterprise "LutskTeplo"	LutskTeplo
Lviv	Lviv communal enterprise "ZaliznychneTeploEnergо"	Lviv ZTE
Myrgorod	Oblast communal production heating economy enterprise "MyrgorodTeploEnergо"	Myrgorod TE
Nikopol	Nikopol communal enterprise "NikopolTeploEnergо"	Nikopol TE
Novograd-Volynsky	Communal enterprise of Novograd-Volynsk city council "Novograd-VolynskTeploKomunEnergо"	N.-Volynsk TKE
Pavlograd	Communal enterprise "PavlogradTeploEnergо"	Pavlograd TE
Rivne	CJSC "Esco-Rivne"	Esco-Rivne
Romny	Communal enterprise "RomnyKomunTeplo" of Romny city council	Romny KT
	Communal enterprise "RomnyTeploService" of Romny city council	Romny TS
Sevastopol	Communal enterprise "SevTeploService" of Sevastopol city council	SevTS
Simpferopol	Leasing enterprise "KrymTeploKomunEnergо"	KrymTKE
Kherson	Municipal communal enterprise "KhersonTeploEnergо"	Kherson TE
Khmelnysky	Municipal communal enterprise "KhmelnyskTeploKomunEnergо"	Khmelnysky TKE
	Communal enterprise "Pivdenno-Zahidni Teplomerezhi"	Khmelnysky PZ TM
Chervonograd	Communal enterprise "ChervonogradTeploKomunEnergо"	Chervonograd TKE
Chernivtsi	Municipal communal enterprise "ChernivtsiTeploKomunEnergо"	Chernivtsi TKE
Chernihiv	OJSC "OblTeploKomunEnergо"	Chernihiv OTKE
Chuhuiv	Communal enterprise "ChuhuivTeplo"	ChuhuivTeplo

## **1. General description of the report's structure and the express assessment methodology**

The structure of the report on express assessment results is conditioned by a list of indicators grouped in the following sections:

### *Number of staff:*

- *specific indicators of the number of staff calculated per:*
  - *1 km of networks;*
  - *1000 Gkal of thermal energy produced;*
  - *1000 subscribers (overall for the enterprise and subscribers of the population group);*
- *labor productivity;*
- *structure of the staff (%).*

### *Production, supply and losses of thermal energy:*

- *specific indicators of supply of thermal energy (calculated per one subscriber);*
- *structure of volumes of realization by groups of consumers (population, budgetary facilities, other consumers);*
- *losses of thermal energy in networks (%);*
- *specific use of fuel for technological needs (tons of c.e./Gkal);*
- *specific use of electric power for technological needs (kW-hour/Gkal);*
- *average annual cost of fuel (UAH/tons of c.e.);*
- *average annual cost of electricity (UAH/kW-hour)*

### *Key financial and economic indicators:*

- *profitability of the main and ordinary activity (%);*
- *actual cost of 1 Gkal (UAH);*
- *level of costs compensation with operating tariffs for population, budgetary facilities, other consumers;*
- *level of compensation of actual costs with net accounted incomes (%);*
- *structure of operational costs (heating) (%);*
- *average monthly costs of paying the labor of a staff worker (UAH/person/month);*
- *level of services fee collection (%);*
- *% of housing subsidies from the net income from realization of services;*
- *% of allocations for compensation of the difference in the price from the net income from realization of services;*
- *average term of accounts payable repayment (months);*
- *average term of current liabilities repayment (months);*
- *actual debt coverage coefficient (loan);*
- *current liquidity ratio;*
- *working capital of the enterprise (thousand UAH);*
- *level of fixed assets' depreciation (%);*
- *level of fixed assets' depreciation calculated per subscriber (UAH/subscriber/year).*

### *Capital investments:*

- *volumes of capital investments calculated per subscriber (UAH/subscriber/year);*
- *structure of capital resources funding sources (%).*

### **Express assessment methodology**

Express assessment was conducted in three stages:

- preparatory – forming the list of the indicators based on which the assessment will be performed, drafting the questionnaire, forming the list of reporting forms for obtaining necessary data;

- data collection – sending the query for enterprises, verification of fullness and feasibility of data obtained, their alignment.
- finalizing – defining coefficients, aggregating express assessment results.

Evaluation of results of heating enterprises' activity was carried out based on compatible indicators for 2009. For this purpose, specific indicators, structure indicators and key financial coefficients were calculated.

### *Using express evaluation data*

Express assessment indicators will in future be used as baseline ones for assessment of results achieved due to the MHR project's implementation.

The information base for realization of express assessment of the enterprises' performance in 2009 were data of *official* financial and statistical reporting, analytical data of the enterprise and statistical data of the city (the full list of the reporting forms that were used for express assessment is shown in Annex 1). Responsibility for authenticity and fullness of information provided lies with the management of the enterprise.

During realization of the express assessment, the following assumptions were used:

- data of financial and statistical reporting contain reliable information and reflect the actual state of affairs at the enterprises;
- in the case if an enterprise is a small business entity and, thus, submits financial reporting in the form "Financial Statement of a Small Business Entity", consisting of the Balance (form 1-m) and the Report on Financial Results (form 2-m), some indicators were defined based on analytical data of such enterprises;
- in the case an enterprise does not submit a certain reporting form, estimated data of the enterprises were used;
- in case double-rate tariffs operate at an enterprise, for calculation of level of compensation of actual costs with current tariffs analytical data of the enterprises on single-rate tariffs were used.
- in the case there is no information about the value of the average salary in the town, in some towns the same indicators of the oblast were used.

Results of pilot enterprises' assessment are shown in the further sections of this report.

## **2. Assessment of the number of staff and its structure**

For assessment of the accordance of the number of staff to objective needs of the enterprises, specific indicators of the quantity of staff were defined and its structure was analyzed. Results of indicators calculations for this section for all pilot enterprises are shown in Annex 2.

An exceptions are the enterprises of the cities of Lviv (Lviv ZTE) and Rivne (CJSC "Esco-Rivne"), since information provided about the number of subscribers of these enterprises is not compatible with that of other enterprises.

The indicator of the specific number of staff calculated per 1 km of networks for enterprises of the cities of Rivne and Sevastopol was not defined, which is caused by absence of thermal networks on the balance of these enterprises.

### ***2.1 Specific indicators of the number of staff***

The following were defined for assessment of the number of staff of the enterprises and labor efficiency: specific indicators of the number of staff calculated per: 1 km of the network, 1000 Gkal of thermal energy produced, 1000 subscribers (in total for the enterprise) and 1000 subscribers (population group).

For the enterprises whose performance indicators were analyzed, the indicator of the specific number of staff per 1 km of the network varies from 2 to 7 persons/km. The average value of this indicator is 4 persons/km. The value of this indicator at the enterprises of the cities of Komsomolsk, Chuhuiv and Khmelnytsky (Khmelnytsky PZ TM) are the closest to the average.

The highest value of this indicator – 7 persons/km belongs to the enterprises of Kramatorsk: CPE "Kramatorsk Teplomerezha" and PA CE "Kramatorsk Mizhray Teplo Merezha". Thus, the enterprises are not performers of centralized heating (CH) and hot water-supply (HWS) services in apartment houses. Besides, CPE "Kramatorsk Teplomerezha" actually does not supply hot water (except for a kindergarten). The lowest value of this indicator belongs to the enterprise of Voznesensk – almost 2 persons/km. Although it does not provide hot water-supply services.

The value of the indicator of the specific number of staff per 1000 Gkal of thermal energy produced varies from 1 to 7 persons/1 thousand Gkal. The average value of this indicator is 2 persons/1 thousand Gkal. The highest value of this indicator belongs to the enterprise of Voznesensk – 7 persons per 1 thousand Gkal of thermal energy produced. The lowest value of this indicator belongs to the heating enterprise of Komsomolsk (1 person/1 thousand Gkal). The difference of this indicator for the enterprises depends on their provision of HWS services. Thus, for example, the heating enterprise of Komsomolsk, where the value of this indicator is the lowest, provides HWS services, while the enterprise of Voznesensk, the value of whose indicator is the highest – does not provide them. Consequently, if we compare the indicator of the specific number of staff per 1 km of the network, Voznesensk TS on the face of it looks like the most efficient enterprise, however, when comparing indicators of the number of staff at the enterprises in their relation to production volumes, this enterprise has the greatest number of employees at small volumes of activity.

It is necessary to pay attention to that 23 enterprises produce thermal energy for the needs of HWS. At 10 out of them volumes of HWS services (warming) are insignificant, as they are provided only in a certain season (or according to a schedule); or only for budgetary facilities or one house, which significantly influences the value of the indicator of the specific number of staff per 1000 Gkal of thermal energy produced.

The value of the indicator of the specific number of staff per 1000 subscribers (overall for the enterprise) varies from 10 to 85 persons. The average value of this indicator makes up 19 persons per 1000 subscribers. The highest value of this indicator belongs to the enterprises of Voznesensk – 85 persons/1000 subscribers, Sevastopol – 54 persons/1000 subscribers and Ivano-Frankivsk – 23 persons/1000 subscribers. The strongest impact on the value of this indicator is exerted by the decision of the local self-government body related to defining the heating enterprise the performer

of CH and HWS services (if available) in the apartment housing fund. Accordingly, the cities in which the heating enterprise is recognized as the performer of services, the indicator of the specific number of staff per 1000 subscribers is above the average, as, for example, in Ivano-Frankivsk.

The lowest values of this indicator belong to the enterprises of Komsomolsk – 10 person/1000 subscribers and Vinnytsya – 11 persons/1000 subscribers. Although, the both enterprises are recognized as performers of CH and HWS services.

Values of the indicator of the specific number of staff per 1000 subscribers (population group) are distributed identically to the previous indicator. This indicator varies from 10 to 96 persons per 1000 subscribers (population group). The average value of this indicator makes up 19 persons per 1000 subscribers. The highest value of this indicator belongs to the enterprises of Voznesensk – 96 persons/1000 subscribers, Sevastopol – 54 persons/1000 subscribers and Chervonograd – 23 persons/1000 subscribers. The lowest values of this indicator belongs to the enterprises of Komsomolsk – 10 persons/1000 subscribers and Vinnytsya – 11 persons/1000 subscribers.

Such significant fluctuations of values of indicators of the specific number of staff calculated per 1000 subscribers (overall for the enterprise) and 1000 subscribers (population group) may prove an inflated number of staff at separate enterprises. The enterprises where the value of these indicators is the highest, should pay attention to efficiency of use of staff and to define whether it is justified to maintenance staff the number of which does not reflect real needs of the enterprise.

Values of the labor productivity indicator fluctuate from 135 to 981 Gkal/employees/year. The average value of this indicator is 520 Gkal/employees/year. The highest values of this indicator belong to the enterprises Komsomolsk TE (981 Gkal/employees/year), Korosten TZ (887 Gkal/employees/year) and Khmelnytsky TKE (834 Gkal/employees/year). The lowest values – Voznesensk TS (135 Gkal/employees/year), Sevastopol TC (157 Gkal/employees/year) and Krasnoperekopsk CHNE (222 Gkal/employees/year).

Thus, having conducted a complex assessment of the indicator of the number of staff at the enterprises in comparison with similar enterprises, it is possible to draw conclusions on the enterprise's management efficiency from the point of view of staff's organization for realization of the main activity and to define directions for improvement of these business processes.

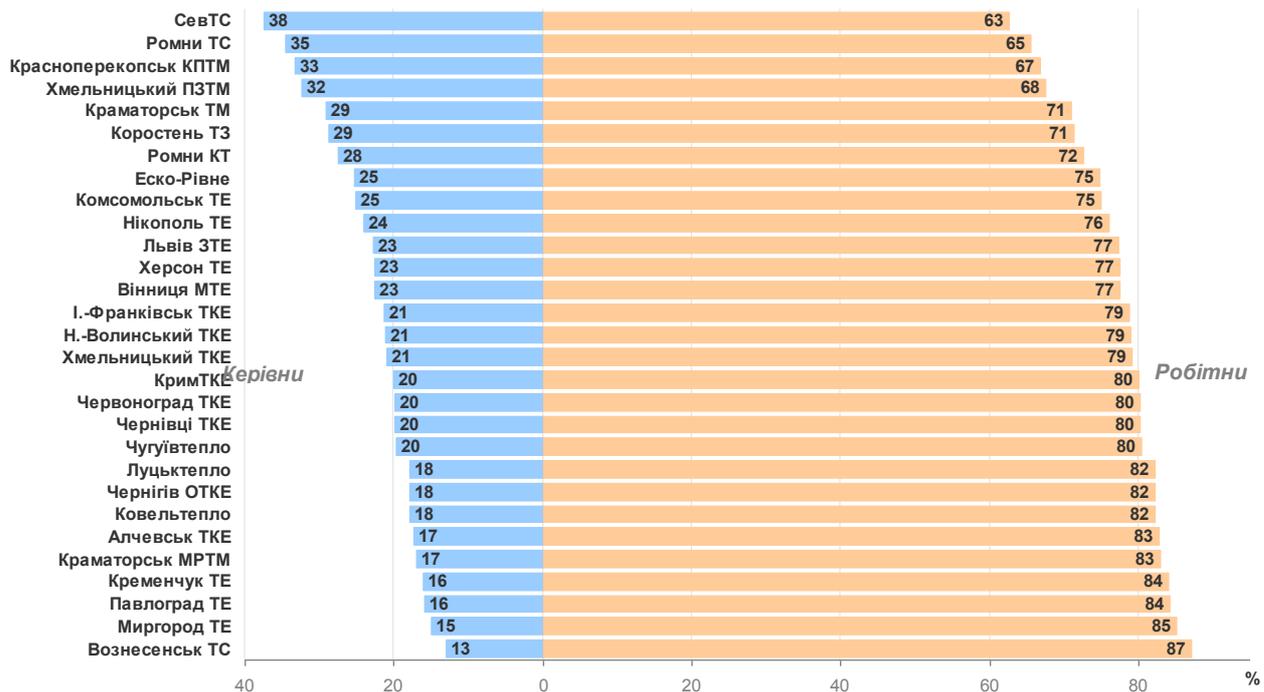
## ***2.2 Structure of the staff***

For definition of the structure of staff of the enterprises, the whole staff was grouped in two categories:

- (1) managers, professionals, specialists;
- (2) workers, servicing staff.

Indicators of the structure of the number of staff at all pilot enterprises are represented in chart 1.

The structure of the staff number at the pilot enterprises in 2009



Based on data of the 29 enterprises analyzed, the part of managers, professionals and specialists in the general structure of staff fluctuates from 13% to 38%. Thus, the part of workers and servicing staff varies from 62% to 87%. The average value of the part of managers, professionals, specialists is 23%, and the deviation – 7 percent points. Respectively, the average value of the indicator for workers and servicing staff is 77%, with a similar standard deviation. It means that for 95% of enterprises the part of managers, professionals, specialists in the general staff structure is within the range from 10 to 37%, and workers and servicing staff – from 63 to 90%. In the sample, the structure of staff of heating enterprises of the cities of Vinnytsya, Lviv, Nikopol and Kherson are the closest to the average value.

Among the rest, it is worth noting the enterprise of Sevastopol. The part of managers, professionals and specialists in these towns is the highest (38%), and the part of workers and servicing personnel is, thus, the lowest (62%). I.e., on average 2 workers are subordinated to one manager. The enterprises of Sevastopol and Romny (Romny TS) should pay attention to such distribution of their staff. The enterprises where the part of managers, professionals and specialists exceeds 25% should reconsider expedience of maintaining such number of managers and the opportunity of administrative processes automation.

At the same time, the lowest part of managers, professionals and workers (13%) and the highest part of workers and servicing staff (87%) belong to the enterprise of Voznesensk. This means in its turn that on average there are 7 workers in subordination of one manager of this enterprise. Such indicators can prove either high efficiency of the managerial staff's activity or its insufficient number (i.e., lack of managerial staff).

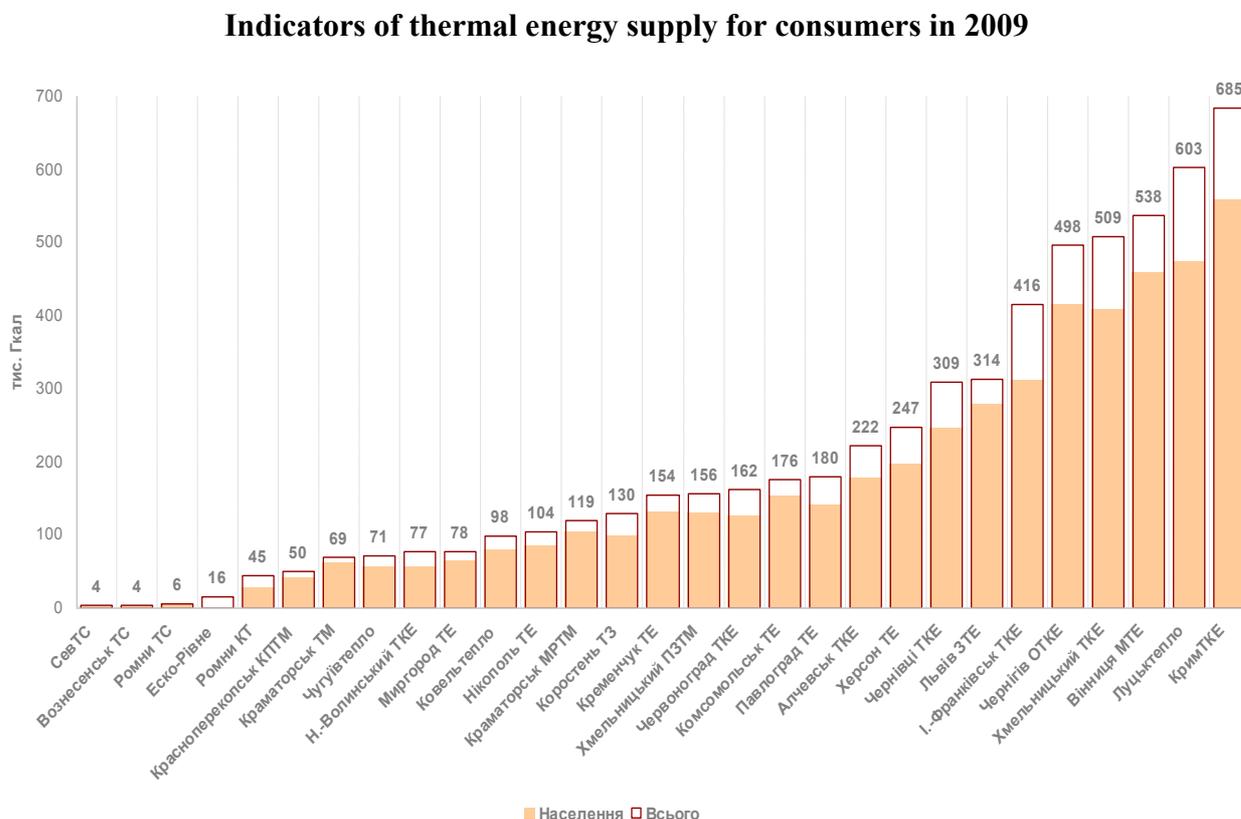
For 16 enterprises out of the 29, the part of managers, professionals, specialists exceeds 20%. These enterprises should pay attention to such ratio between the staff categories. To improve the staff management system, these enterprises should aim their efforts at strengthening their HR structure and creation of enterprise management automation systems.

### 3. Assessment of production capacities of the enterprises and their energy efficiency

#### 3.1 Specific thermal energy supply for consumers

Indicators of thermal energy supply for consumers for all pilot enterprises are shown in chart 2.

Chart 2



Specific indicators of thermal energy (TE) supply for consumers per one subscriber were calculated by the groups: 1) in total for the enterprise, 2) population, 3) budgetary and other consumers. The enterprises of Lviv and Rivne were excluded from assessment of these indicators for the reasons indicated in the previous section of this report.

Results of indicators calculations within this section for all pilot enterprises are shown in Annex 3.

For the enterprises whose performance indicators were analyzed, the indicator of specific TE supply per subscriber as a whole for the enterprise varies from 4 to 11 Gcal/subscriber/year. The average value of this indicator is 8 Gcal/subscriber/year. The value of the indicator for heating enterprises of Krasnoperekopsk, Chernivtsi and Chuhuiv is the closest to the average. Thus, it is worth noting that all the three enterprises do not provide the HWS service. The highest value of the indicator belongs to the enterprise of Lutsk – 11 Gcal/subscriber/year (provides HWS services), the lowest – the enterprise Romny TS – 4 Gcal/subscriber/year (provides the HWS service only for 1 building).

The indicator specific TE supply per one subscriber of the "population" group varies from 3 to 9 Gcal/subscriber/year. The average value of this indicator is 6 Gcal/subscriber/year. The value of this indicator for the heating enterprises of Kovel (provides the HWS service), Krasnoperekopsk (does not provide the HWS service) and Sevastopol (provides the HWS service only for budgetary facilities) is the closest to the average. The highest value of this indicator belongs to the enterprise Kremenchuk TE – 9 Gcal/subscriber/year (provides the service of warming HW), the lowest value of this indicator is observed at Romny TS – 3 Gcal/subscriber/year.

The indicator of specific TE supply per one subscriber of the "budgetary and other consumers" group varies from 28 to 523 Gkal/subscriber/year. The average value of this indicator is 108 Gkal/subscriber/year. The value of the indicators of the heating enterprises of Kherson and Chuhuiv is the closest to the average. The highest value of this indicator belongs to the enterprise Sevastopol SevTS – 523 Gkal/subscriber/year, the lowest of all – Romny TS – 28 Gkal/subscriber/year.

Analysis of indicators of specific TE supply revealed a mutual connection between the amount of TE supplied and availability or non-availability of HWS services in the city. Accordingly, the number of subscribers in some towns may include CH and HWS subscribers, while in others – only CH subscribers.

Moreover, the specific supply indicator may be impacted by the temperature of air outside during the heating season, which in southern towns, pursuant to standards, is higher; as well as observance by the enterprise of quality heat medium parameters. However, the parameters indicated above were not analyzed for the purposes of this report.

Besides, we should pay attention to the fact that specific TE supply for budgetary facilities characterizes, among other things, these budgetary facilities. The higher the supply is, the bigger is the consumer, which may be the education department, which maintains a lot of buildings and constructions, etc. Thus, in oblast cities, where there are more of such large consumers than in smaller towns, specific supply indicators may be high. For the purposes of this report, the consumers' profile was not studied.

### ***3.2 The structure of thermal energy supply for consumers***

Analysis of the structure of thermal energy (TE) supply for consumers was performed by consumer groups. Results of indicators calculations within this section for all pilot enterprises are shown in Annex 3.

Based on data of the 29 enterprises analyzed, the part of TE supply for population in the total TE supply structure of the enterprises fluctuates from 42% to 89%, the part of supply for budgetary facilities – from 8% to 95%, and other consumers – from 0% to 12%.

On average for all the enterprises, the part of population in total TE supply makes up 76%. The lowest part of population in the structure of TE supply compared with other enterprises belongs to Esco-Rivne, where it is 4.5%. This enterprise also has the greatest part of budgetary facilities in the structure of TE supply compared with other enterprises (94.8%), and one of the lowest parts of other consumers (0.7%). The greatest part of population in the TE supply structure belongs to the enterprises Kramatorsk MRT (88%), Kramatorsk TM (89%) and the enterprise "ZaliznychTeploEnergo" Lviv (89%).

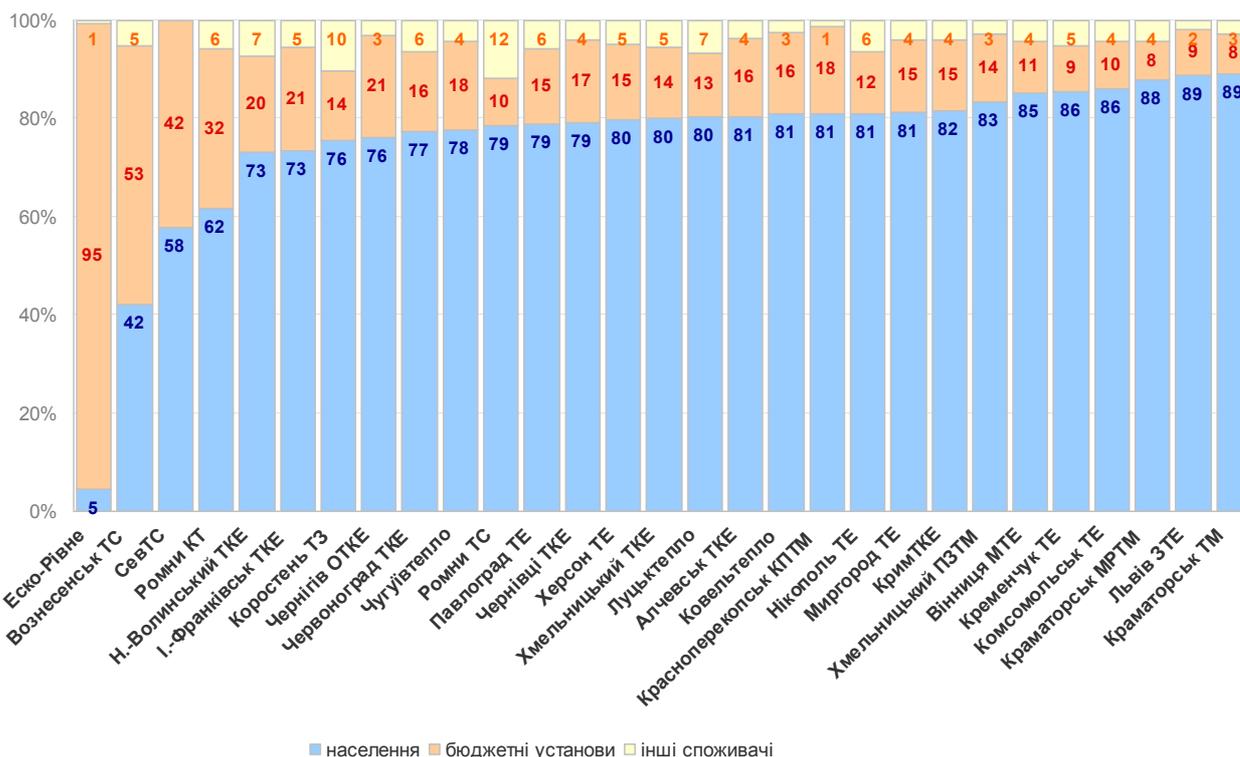
On average for all the enterprises the part of budgetary facilities in the general structure of TE supply does not exceed 20%. The lowest part of budgetary facilities in the TE supply structure compared with the other enterprises belongs to the heating enterprises Kramatorsk MRT and Kramatorsk TM, for the both enterprises it is 8%.

The average part of TE supply for other consumer in the general structure of TE supply for all the enterprises is 5%. The smallest part of other consumer in the TE supply structure compared with the other enterprises belongs to the heating enterprises of Krasnoperekopsk and Rivne. The highest part of TE supply for other consumer belongs to the enterprises Romny TS (12%) and Korosten TZ (10%).

Thus, for the majority of enterprises population is the largest consumer of thermal energy, its part on average makes up 76% (the lowest 73%, the largest – 89%). That is why financial performance indicators of the heating enterprises to a great extent depend on to what extent tariffs on thermal energy for population compensate for the costs of its production and realization.

The structure of thermal energy supply by groups of consumers is reflected in chart 3.

### The structure of thermal energy supply for consumers in 2009



### 3.3 Losses of thermal energy

Indicators of thermal energy losses are shown in annex 4. Annual TE losses (*based on data of official statistical reporting*) vary from 0% to 32%. On average for all the enterprises the losses made up 14%, while the standard deviation is 7 p.p. Accordingly, the range in which 95% enterprises appear based on this indicator makes up from 0.05% to 28%. The value of this indicator was not defined for the enterprise of Rivne and Sevastopol because of absence of thermal networks on the balance of these enterprises. Among the enterprises that have thermal networks on their balance, the lowest values of the losses indicator are demonstrated by the enterprises of Voznesensk (8%) and Romny (Romny TS, 9%). The highest values of this indicator are observed at Ivano-Frankivsk TKE – 32%, Krasnoperekopsk CE TN – 29% and Nikopol TE - 29%.

The significant variations of the losses indicator are explained by different approaches of enterprises to filling in statistical reporting indicators. Some enterprises reflect in their reporting actual losses at the level of the normative value (no more than 13%), others – at the actual level defined as a result of calculations. To define the amount of actual losses, it is necessary that all sources of thermal energy and all consumers were equipped with thermal energy measuring devices.

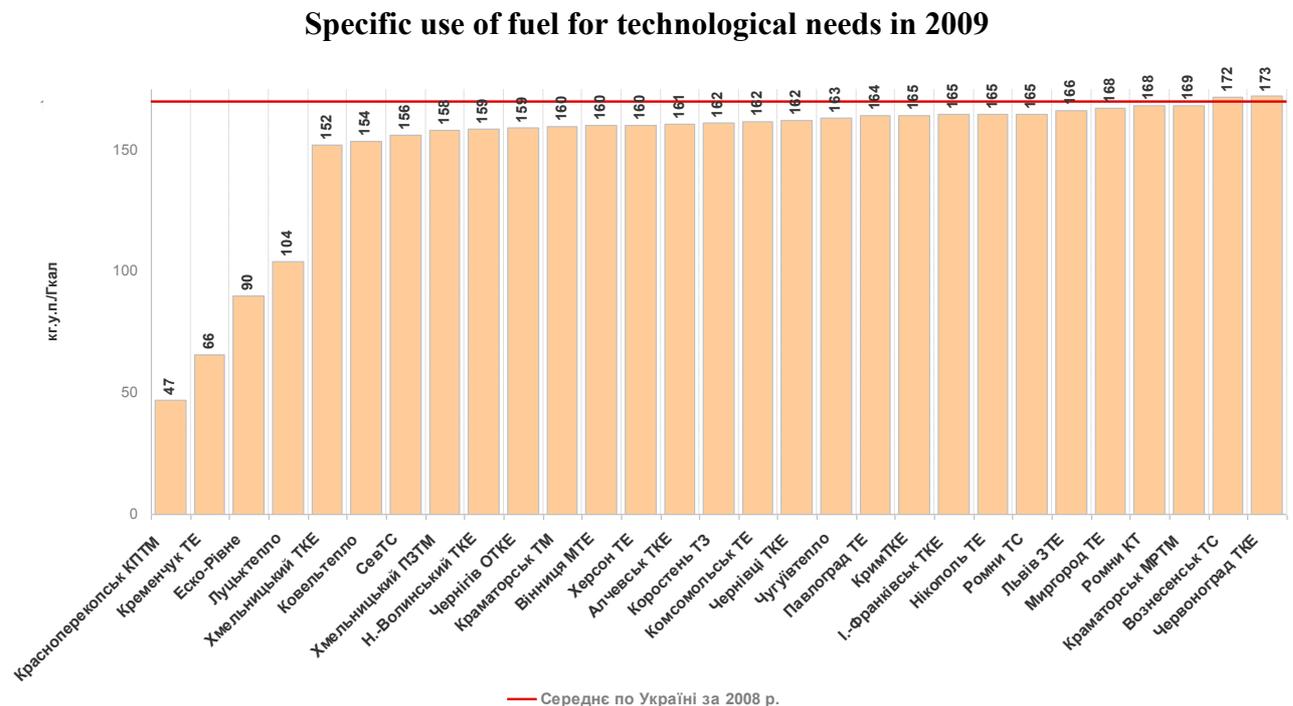
### 3.4 Specific use of fuel and electricity for technological needs

Indicators of specific use of fuel and electric power for technological needs, as well as the average annual cost of fuel and electric power are shown in annex 4.

The indicator of specific use of fuel for technological needs varies from 0.05 to 0.17 t.c.e./Gkal. The average value of this indicator for the whole sample of enterprises is 0.15 t.c.e./Gkal. The closest to the average are values of the enterprises KovelTeplo and Khmelnytsky TKE. The highest values of this indicator belong to the enterprises of Voznesensk and Chervonograd – 0.17 t.c.e./Gkal, the lowest – Krasnoperekopsk CHNE (0.06 t.c.e./Gkal).

Indicators of specific use of fuel for technological needs at pilots enterprises in 2009 compared with the average indicator for Ukraine for 2008 (based on data of form No.1-tep "Report on thermal energy supply for 2008") are represented in chart 4.

Chart 4



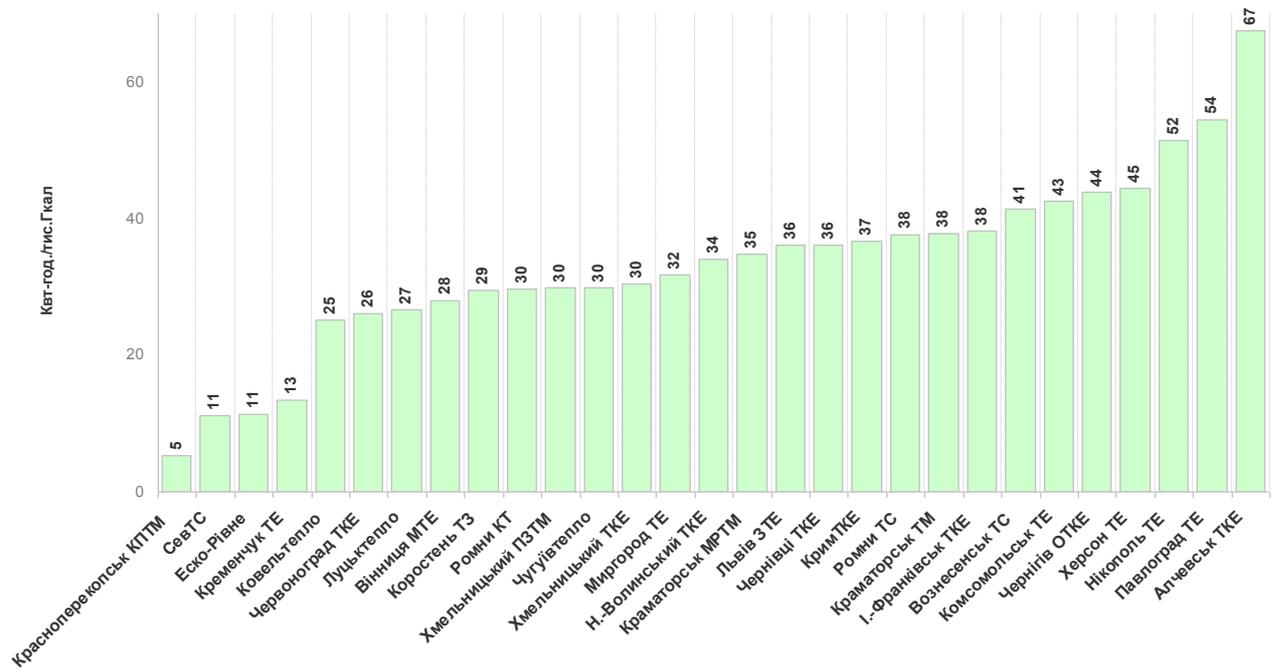
The indicator of specific use of electric power for technological needs varies from 5 to 67 kW.hour/thousandGcal. The average value of this indicator for the whole sample is 33 kW.hour/thousandGcal. The closest to the average is the indicator of the enterprise Novograd-Volynskyi ТКЕ. The highest value of this indicator belongs to Alchevsk ТКЕ (67 kW.hour/thousandGcal). The lowest of all – Krasnoperekopsk CHNE (5 kW.hour/thousandGcal). The low level of specific use of electric power for technological needs at Krasnoperekopsk CHNE is explained by small volumes of own production TE and a significant part of purchased heat in the thermal energy supply structure.

As a rule, the highest specific use of fuel are a result of inefficient operation of boilers (obsolete equipment, low output-input ration). On the other hand, higher specific consumption of coal equivalent can be observed at those enterprises where co-generation devices are installed, since their operation requires additional consumption of coal equivalent. For the purposes of this report, availability of co-generation devices at pilot enterprises was not analyzed.

Indicator of specific use of electric power for technological needs at pilot enterprises in 2009 are represented in chart 5.

Chart 5

## Specific use of electric power for technological needs in 2009



## 4. Key financial indicators

For assessment of results of the enterprises' operational activity, financial indicators (coefficients) are applied. A financial coefficient is a relative indicator that establishes a link between two absolute indicators. In this section we analyze the following financial indicator of the enterprises' activity: profitability, costs compensation level and actual prime cost, the structure of operational costs, level of fees collection and liquidity.

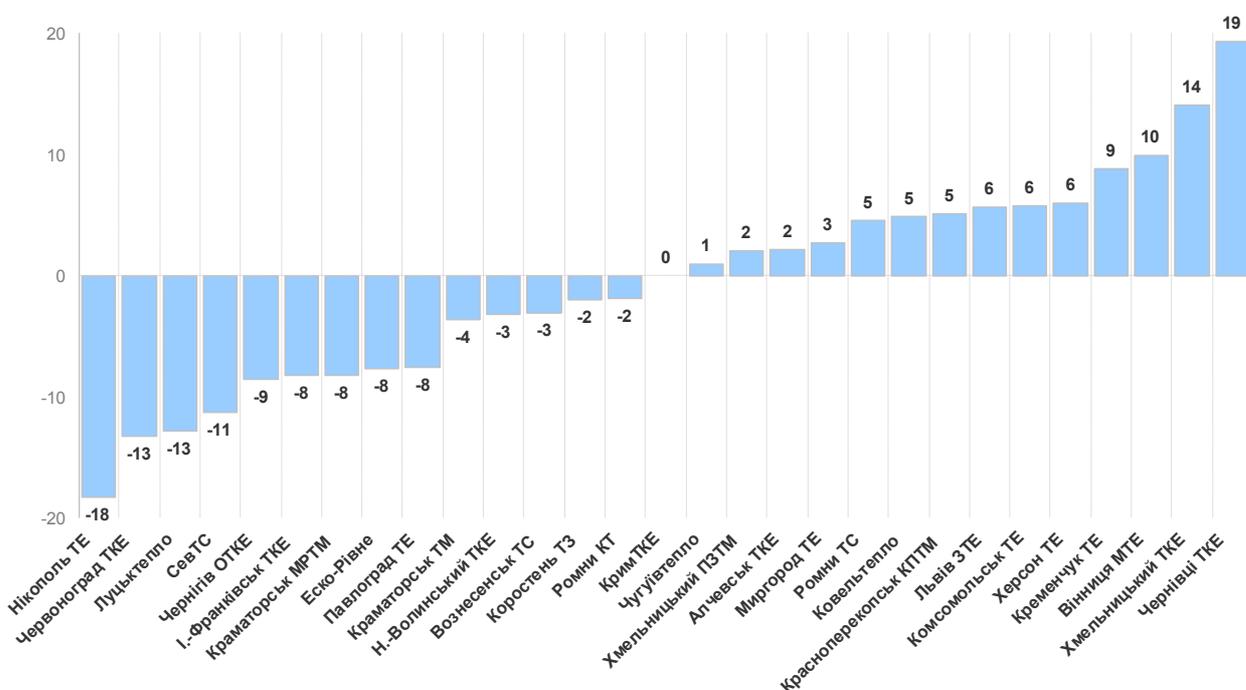
### 4.1 Profitability

*Profitability of the main activity (provision of heating services).* Indicators of profitability of the main activity at pilot enterprises are shown in annex 5. Out of 29 enterprises, 14 enterprises were profitable, 14 – unprofitable, one enterprise has zero profitability. The value of profitability coefficient varies from –18% to 19%.

Indicators of profitability of the main activity at pilot enterprises in 2009 are shown in chart 6.

Chart 6

**Indicators of profitability of the main activity of pilot enterprises in 2009**



The highest main activity profitability indicator belongs to the enterprise Chernivtsi TKE (19%). The second and third rates belong to the enterprises Khmelnytsky TKE (14%) and Vinnytsya MTE (10%). The lowest indicator is demonstrated by Nikopol TE (-18%). It is followed by the value of LutskTeplo (-13%) and Chervonograd TKE (-13%). The enterprise of Simferopol has zero profitability.

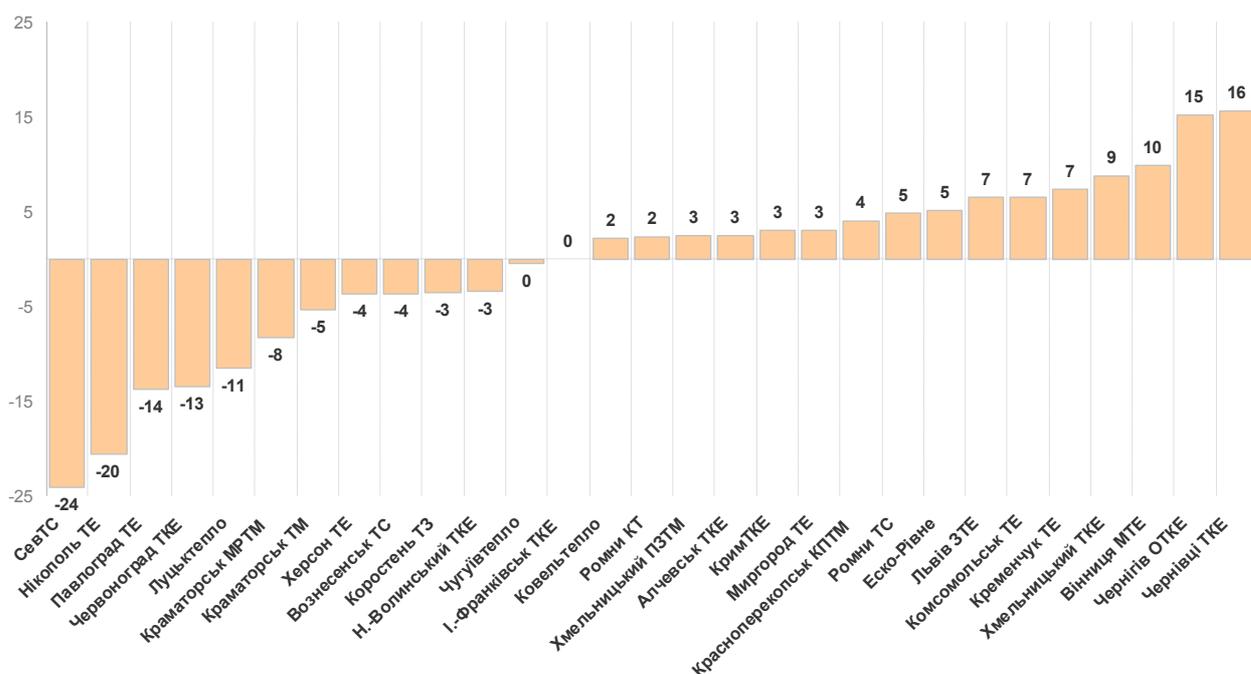
*Profitability of routine activity.* Indicators of profitability of routine activity of pilot enterprises are shown in annex 6.

Out of the 29 enterprises, profit was obtained by 16 enterprises, 11 are unprofitable, 2 enterprises have zero profitability. The profitability coefficient varies from (-24%) to 16%.

Indicators of routine activity profitability of pilot enterprises in 2009 are shown in chart 7.

Chart 7

**Indicators of routine activity profitability of pilot enterprises in 2009**



The highest indicators of routine activity profitability belong to the enterprises of Chernivtsi (16%) and Chernihiv (15%). The lowest routine activity profitability indicator belongs to the enterprise of Sevastopol (-24%). It is followed by the enterprise Nikopol TE (-20%).

The enterprises of Sevastopol, Nikopol, Pavlograd, Voznesensk, Lutsk, Kherson and Chuhuiv should analyze results of other activity types, which deteriorate results of the main activity, and thus, the financial status of these enterprises (i.e., increase losses of the enterprises).

#### 4.2 Level of costs compensation and actual prime cost

Indicators of the levels of costs compensation and actual prime cost calculated per Gkal are shown in annex 6.

The level of costs compensation with the current tariffs for population group varies from 14% to 95%. On average for all the enterprises analyzed, the level of costs compensation with the current tariffs for population is 69%. Thus, at 13% enterprises it does not reach 50%. The highest values of this indicator belong to the enterprises of Komsomolsk (95%) and Myrgorod (93%). The lowest level of costs compensation with current tariffs for population is demonstrated by the enterprise of Sevastopol, where it makes up 14%. The value of the SevTS indicator is significantly lower than the next lowest value that belongs to the enterprise of Ivano-Frankivsk and makes up 32%.

The level of costs compensation with current tariffs for budgetary facilities varies from 99% to 235%. On average for all the enterprises analyzed, the level of costs compensation with current tariffs for budgetary facilities is 167%. The lowest values of this indicator belong to the enterprises Esco-Rivne – 99% and Sevastopol SevTS – 102%. The highest values of this indicator are demonstrated by the enterprises Kramatorsk TM (235%) and Khmelnytsky TKE (215%).

For the category of other consumers, the indicator of costs compensation with current tariffs varies from 99% to 235%. On average, for all the enterprises analyzed this indicator makes up 175%. The lowest values of this indicator belong to the enterprise Esco-Rivne, where it is 99%, and SevastopolTS (104%). The highest values belong to the enterprises Kramatorsk TM (235%) and KovelTeplo (221%).

Among the 29 enterprises, only 9 apply double-rate tariffs (see annex 11). The enterprises Vinnytsya MTE, Voznesensk TS, Korosten TZ, Kramatorsk MRT, Kramatorsk TM, Krasnoperekopsk CHNE, Lviv TZ and Chernivtsi TKE introduced double-rated tariffs for all

consumer groups, the enterprises Ivano-Frankivsk TKE and Sevastopol SevTS – only for population.

Information about the current tariffs of pilot enterprises as on July, 1, 2010 is shown in Annex 11.

Thus, it is possible to draw the conclusion that for the majority of enterprises tariffs for population are set at the level that is lower than economically substantiated costs. This also can be conditioned by untimely revision of the tariffs (untimely reflection of changes of prices and tariffs on basic resources). At the same time, for budgetary facilities and other commercial consumers the profitability percentage in tariffs on heating services has the highest value.

Values of the indicator of the level of actual costs compensation with net charged incomes vary from 81% to 125%. On average, for all the enterprises analyzed, the level of actual costs compensation with net charged incomes is 100%. The lowest values of this indicator belong to the enterprises of Simferopol and Chervonograd, where they make up 81% and 84%, respectively. The highest values of this indicator are demonstrated by the enterprises Chernivtsi TKE (125%) and Khmelnytsky TKE (116%).

Based on results of the assessment, it is also possible to conclude that the enterprises that introduce double-rate tariffs for all consumer groups have better indicator of costs compensation with incomes than those enterprises that have single-rate tariffs.

The actual prime cost of one Gkal varies from 220 to 510 UAH. The average value of this indicator for all the enterprises makes up 296 UAH. The lowest values of this indicator belong to the enterprises Romny TS (220 UAH) and Khmelnytsky TKE (230 UAH). The highest value of this indicator belongs to the enterprise Sevastopol TS (510 UAH), which significantly exceeds indicators of the other enterprises. Sevastopol is followed by Voznesensk TS – 387 UAH.

The fluctuations of values of this indicator depend on the structure of thermal energy supply, i.e. the enterprises for which the particle of population in the TE supply structure is higher, have lower values of the actual prime cost of one Gkal.

### ***4.3 Structure of operational costs (heating)***

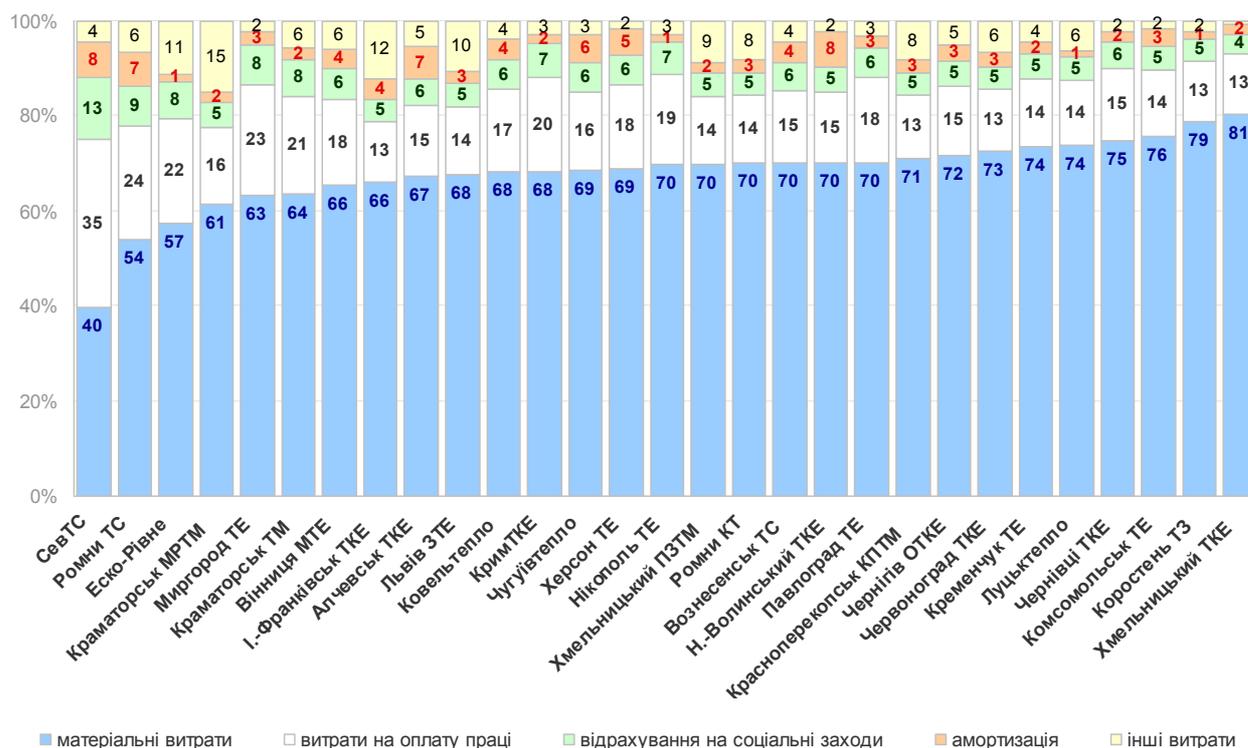
The structure of operational costs is shown in annex 8.

The structure of operational costs based on average indicators of all the enterprises in 2009 was the following:

- material costs – 68%;
- labor payment costs – 17%;
- social activities deductions – 6%;
- depreciation – 4%
- other costs – 5%.

The structure of operational costs of all the enterprises in 2009 is represented in chart 8.

## Structure of operational costs in 2009



Thus, the most substantial components of costs of an enterprise are material costs and labor payment costs with deductions for social activities: their combined part in the costs structure makes up 91%. And this, in its turn, means that enterprises in their activity to a great extent depend on growth of prices on basic material resources (fuel, electric power, fuel and lubrication materials, water, etc.), as well as growth of the level of minimal wages at the legislative level (the size of minimal wages in Ukraine in 2009 grew from 605 UAH to 669 UAH).

The part of material costs in the costs structure of all the enterprises varies from 40% to 81%. The highest values belongs to the enterprises of Khmelnytsky TK (81%) and Korosten (79%). The lowest part is demonstrated by Sevastopol SevTS (40%) and Romny TS (54%).

The part of costs of labor payment in the costs structure of all enterprises varies from 13% to 35%. The lowest parts belong to the enterprises Ivano-Frankivsk TKE (13%), Korosten TZ (13%), Chervonograd TKE (13%), Khmelnytsky TKE (13%). The highest values belong to Sevastopol SevTS (35%), Romny TS (24%) and Myrgorod TE (23%). The fluctuation of the part of labor payment costs in the costs structure is explained by untimely increase of salary at enterprises because of lack of funds.

The indicator of average monthly costs of labor payment per staff worker varies 614 to 3026 UAH/person/month (annex 4). The average value of this indicator is 1928 UAH/person/month. The closest to the average are indicators of the enterprises Chernihiv OTKE and ChuhuivTeplo. The highest level of average monthly labor payment costs belongs to Esco-Rivne (3026 UAH/person/month). The lowest – to Voznesensk TS (614 UAH/person/month).

The part of deductions for social activities in the costs structure of all the enterprises varies from 4% to 13%. The lowest parts belong to the enterprises Khmelnytsky TKE (4%), Ivano-Frankivsk TKE (5%), Korosten TZ (5%), Krasnoperekopsk CHNE (5%), Chervonograd TKE (5%), LutskTeplo (5%) and Romny KT (5%). The highest values belong to Sevastopol SevTS (13%) and Romny TS (9%). Since deductions for social activities depend on the amount of the costs of labor payment for the staff of the enterprise, the trends of the indicators' change are similar to the trends of the change of labor payment parts. Thus, for the enterprises of Ivano-Frankivsk, Korosten and

Chervonograd the part of deductions for social activities is the lowest, since the percentage of labor payment costs at these enterprises is the lowest. The situation is similar for the enterprises of Romny and Sevastopol, which have the highest values of the share of deductions for social activities.

The part of other costs in the costs structure of all enterprises does not exceed 15%. The lowest parts belong to the enterprises Kherson TE (2%) and Komsomolsk TE (2%). The highest values – to Kramatorsk MRT (15%), Ivano-Frankivsk TKE (12%) and Esco-Rivne (11%).

The part of depreciation in the costs structure of all the enterprises varies from 1% to 8%. The lowest parts belong to Korosten (1%), Lutsk (1%), Rivne (1%), Nikopol (1%). The highest – to Sevastopol (8%) and Novograd-Volynsky (8%).

Based on average indicators for all the enterprises, the greatest part in the general costs structure is made up by the cost of fuel (see annex 8). The average part of the cost of fuel in the general costs structure is 57%. The particle of costs of electric power – 7%, costs of purchased heat – 3%, other material costs – 3% and costs of purchased water –1%.

The part of costs of fuel in the general costs structure of all the enterprises varies from 15% to 72%. The lowest part is owned by Krasnoperekopsk CHNE (15%), the value of which is significantly lower compared with others. The second smallest value is 34% (Sevastopol). The largest values are those of Khmelnytsky TKE (72%) and Korosten TZ (68%).

The average annual costs of fuel for the enterprises (calculated per t.c.e.) vary from 669 to 1956 UAH/t.c.e. On average during one year the cost of fuel for all the enterprises make up 955 UAH/t.c.e. The closest to the average value are indicators of the enterprises Komsomolsk TE, Korosten TZ, LutskTeplo and Romny KT. The highest indicators of average annual cost of fuel belong to Kremenчук TE (1956 UAH/t.c.e.) and Esco-Rivne (1605 UAH/t.c.e.), the lowest – to Romny TS (669 UAH/t.c.e.) and Alchevsk TKE (681 UAH/t.c.e.).

The fluctuation of the indicator of average annual cost of fuel for the enterprises are caused by different structures of thermal energy consumption, as the price on natural gas for different groups of consumers (population, budgetary facilities and other consumers) is different. Optimization of average annual cost of fuel for enterprises is possible in the case of implementing energy-efficiency measures.

The particle of costs of purchased heat in the costs structure of all enterprises varies from 0% to 51%. For the majority of enterprises the part of purchased heat is insignificant. Thus, for 26 of the 29 enterprises it does not exceed 2%. Instead, for some enterprises it is very high. The part of costs of purchased heat in the costs structure of the enterprise Krasnoperekopsk CHNE is 51%, LutskTeplo – 23%, Kremenчук TE – 10%.

The part of costs of electric power in the costs structure of all the enterprises varies from 1% to 15%. The lowest part belongs to Krasnoperekopsk CHNE (1%) and Khmelnytsky TKE (2%). The highest value – to the enterprises Alchevsk TKE (15%) and Komsomolsk TKE (12%).

Average annual costs of the enterprises for electric power vary from 0.13 to 1.15 UAH/kW-hour. On average during the year costs of electric power for all the enterprises made up 0.56 UAH/kW-hour. The closest to the average value are indicators of Alchevsk TKE, LutskTeplo, Chernihiv OTKE. The highest level of average annual costs of electric power belongs to the enterprises Sevastopol SevTS (1.15 UAH/kW-hour) and Esco-Rivne (0.99 UAH/kW-hour), the lowest – Khmelnytsky TKE (0.13 UAH/kW-hour).

The fluctuations of the amount of average annual costs for electric power for the enterprises can be caused by presence of co-generation plants, which makes it possible for the enterprises to use "cheaper" electric power of their own production (for example, Khmelnytsky TKE) and use of multi-tariff accounting of electric power (peak, semi-peak, night).

The part of other material costs in the costs structure of all enterprises varies from 0% to 8%. The lowest part belongs to the enterprises of Vinnytsya, Voznesensk, Novograd-Volynsky and

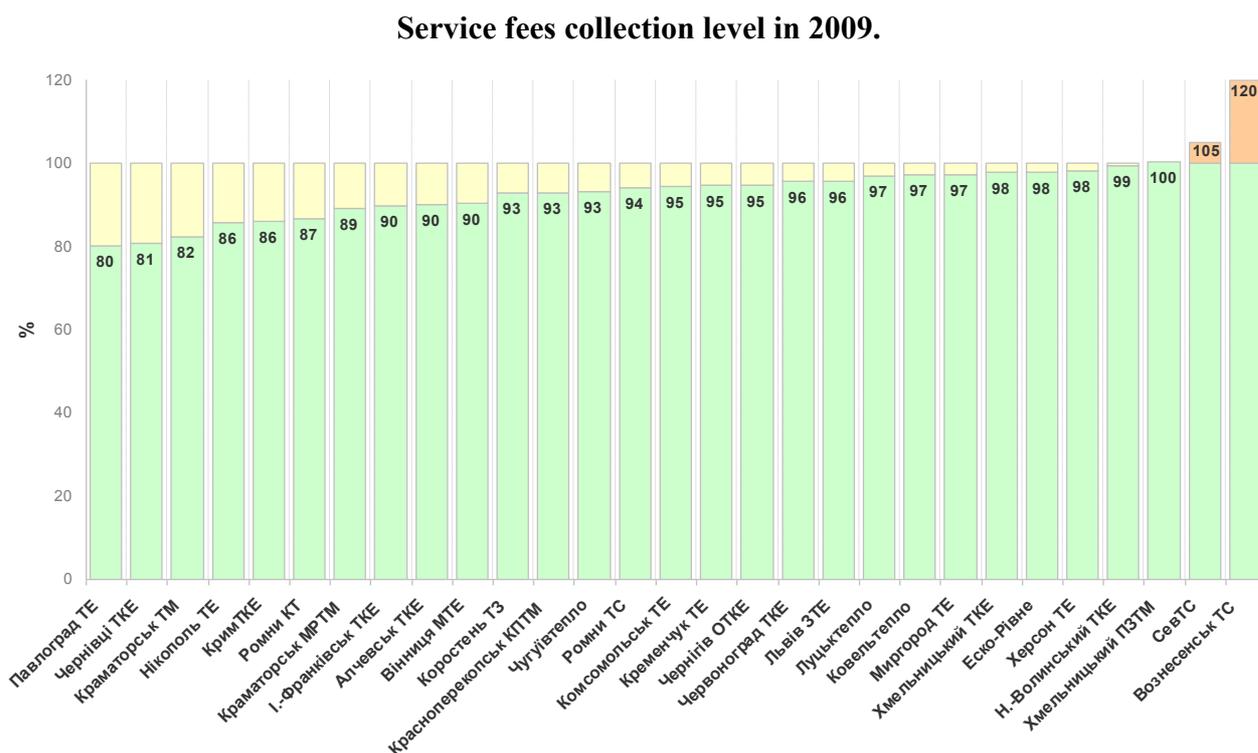
Chernihiv. The highest values are demonstrated by the enterprises Esco-Rivne (8%), Romny TS (7%) and LutskTeplo (7%).

The part of costs of purchased water in the costs structure of all enterprises varies from 0% to 5%. For the majority of enterprises the part of purchased water does not exceed 4%. The highest values belong to Lviv ZTE (5%) and Komsomolsk TKE (4%).

#### 4.4 Fees collection level

Indicators of the collection level of fees for heating services provided for all the enterprises in 2009 are shown in chart 9.

Chart 9



The indicator of the service fees collection level for all categories of consumers fluctuates from 80% to 120%. The average value of this indicator for all the enterprises is 94%. The highest values of this indicator belong to Voznesensk TS (120%), Sevastopol SEVTS (105%) and Khmelnytsky PZ TM (100%). The lowest collection level is observed at Pavlograd TE (80%), Chernivtsi TKE (81%) and Kramatorsk TM (82%).

The service fees collection level in the population category fluctuates from 65% to 110%. The average value of the indicator is 85%. The lowest indicator value is that of Romny TS (65%) and Nikopol (66%). The highest – of Sevastopol (110%) and Khmelnytsky TK (101%).

The percentage of housing subsidies to the net income from realization of services varies from 0% to 7%. On average, at all the enterprises this indicator makes up 2%. The enterprises of Voznesensk, Myrhorod, Pavlograd, Sevastopol, Rivne and Simferopol have a zero value of this indicator. The highest values belong to Kramatorsk MRT (7%), Kramatorsk TM (5%), Nikopol TE (5%) and Chervonograd TKE (5%).

The percentage of dotations for compensation of the difference in prices from the net income from realization of services varies from 0% to 47%. On average, for all the enterprises this indicator makes up 7%. The enterprises of Voznesensk, Ivano-Frankivsk, Kovel, Kramatorsk, Krasnoperekopsk, Simferopol, Lviv, Nikopol, Rivne, Romny (Romny KT), Chervonograd, Chernivtsi and Chernihiv have a zero value of this indicator. The highest values of this indicator are

those of Sevastopol SevTS (47%), its value is significantly higher compared with the other cities. It is followed by the value of 20% belonging to Khmelnytsky PZ TM.

Information about the fee collection level for all pilot enterprises, as well as percentage correlation of housing subsidies and allocations to compensate the difference in price to the net income from services realization are shown in annex 7.

#### **4.5 Liquidity**

The average term of accounts payable repayment for the enterprises analyzed fluctuates from 1 to 13 months. The average value of this indicator makes up 5 months. The longest average term of accounts payable repayment is that of Simpheropol Crimea TKE (13 months) and Pavlograd TE (12 months). For the rest of the enterprises the average term of accounts payable repayment is less than a year. The shortest accounts payable repayment term is observed for SevTS (1 month), while for KovelTeplo, Myrgorod TE, Novograd-Volynsky TKE, Romny KT, Khmelnytsky TKE, Khmelnytsky PZ TM it was 2 months.

The average term of current liabilities repayment for the enterprises analyzed fluctuates from 1 month to 2.5 years (30 months). The average value of this indicator makes up 6 months. The longest average term of current liabilities repayment belongs to the enterprise of Pavlograd (30 months) and it significantly differs from indicators of the other enterprises. For the enterprises of Simpheropol, Nikopol, Alchevsk and Kramatorsk MRT this indicator exceeds 1 year. The shortest repayment term from 1 to 2 months is demonstrated by the enterprises of Novograd-Volynsky, Romny TK, Myrgorod, Rivne and Khmelnytsky TKE.

Information about average accounts payable and current liabilities repayment at pilot enterprises in 2009 is shown in annex 7.

In the structure of accounts payable for commodities, work and services, the greatest share belongs to arrears for power mediums (fuel, purchased heat and electric power). The largest creditors of heating enterprises are still fuel suppliers, their part in the structure of accounts payable varies from 38% to 100%. At the enterprises Voznesensk TS, Novograd-Volynsky TKE, Esco-Rivne and Romny KT the particle of arrears to fuel suppliers is 100% of the debt structure. The lowest part of fuel arrears belongs to the enterprise Crimea TKE, where this indicator makes up 38%. In the structure of accounts payable the greatest part of arrears for purchased heat belongs to the enterprises of Krasnoperekopsk (32%), Lutsk (28%) and Kremenchuk (25%).

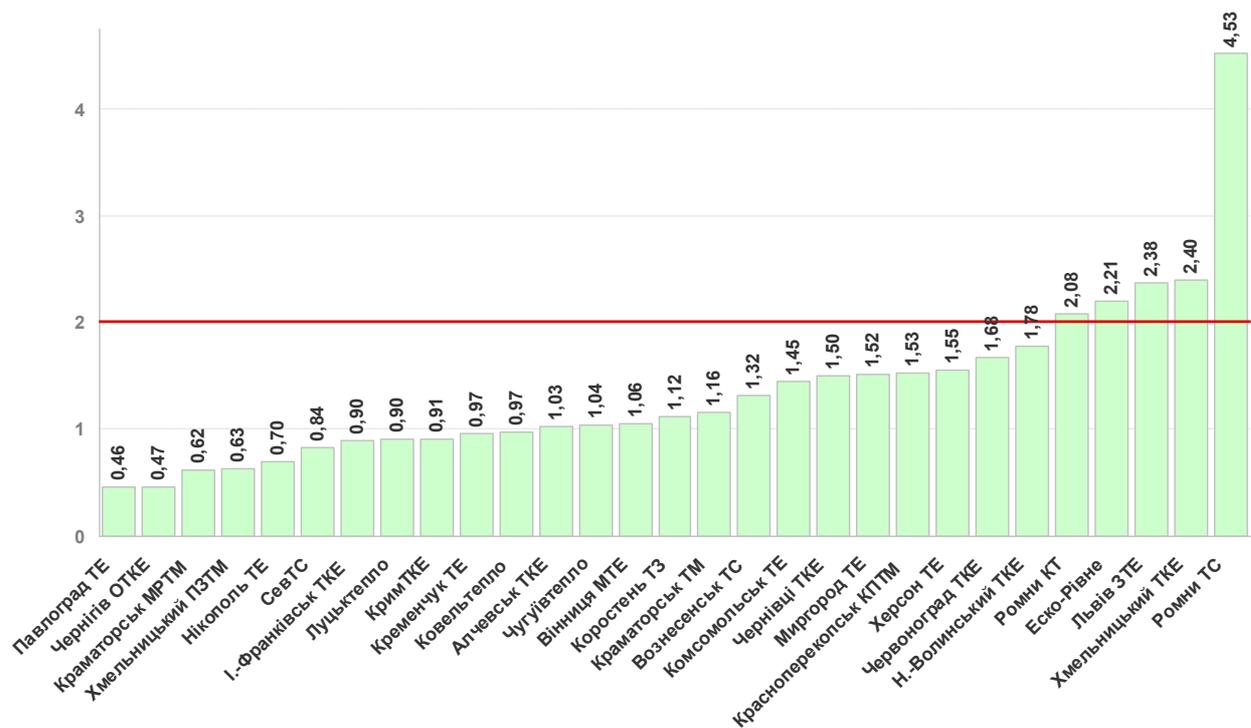
The particle of arrears for electric power in the structure of accounts payable varies from 2 to 26%. The highest parts of arrears for electric power are observed for the enterprises of Kramatorsk (20%) and Chernivtsi (26%). KovelTeplo is the only enterprise that has accounts payable for leasing of equipment, the part of which in the structure of accounts payable of this enterprise is 15%. The structure of accounts payable for commodities, work and services is shown in annex 10.

Almost 45% (13 enterprises out of 29) of pilot enterprises in 2009 did not involve credit resources. For the enterprises that involved credit resources in 2009, the actual debt coverage coefficient acquired the value from (-22.8) to 18.3. The average value of this coefficient is 0.2 (annex 5). The highest value of this indicator belongs to Kramatorsk MRT (18.3) and Lutsk (8.5). The lowest value of this indicator is observed for Simpheropol KrymTKE (-22.8) and Chervonograd TKE (-14). The enterprises (Krasnoperekopsk CHNE, KrymTKE, Chervonograd TKE), where the value of the debt coverage coefficient is less than 1, should pay more attention to financial planning issues.

The ratios of current liquidity of pilot enterprises in 2009 are represented in chart 10.

Chart 10

#### **Current liquidity coefficients for the pilot enterprises in 2009**



The current liquidity coefficient for the enterprises analyzed is within the range from 0.46 to 4.53 (annex 5). The average value of this indicator for all the enterprises is 1.4. The highest current liquidity coefficient belongs to Romny TS (4.53) and Khmelnytsky TK (2.4). The lowest indicator of current liquidity is that of the enterprises Pavlograd TE (0.46) and Chernihiv OTKE (0.47). The enterprises where the value of the current liquidity coefficient exceeds 2 should pay attention to working assets and current liabilities indicators and analyze their proper registration in financial statements in compliance with requirements of the legislation.

Working capital of the enterprises analyzed fluctuates from -73514 thousand UAH to 28941 thousand UAH (annex 5). The highest value of the working capital belongs to the enterprises Lviv ZTE (28941 thousand UAH) and Khmelnytsky TKE (22154 thousand UAH). However, these enterprises should conduct a comprehensive analysis of working assets and current liabilities indicators and analyze their proper registration in financial statements in compliance with requirements of the legislation.

For 39% of enterprises the working capital indicator acquired a negative value, among them enterprises of Ivano-Frankivsk, Kovel, Kramatorsk, Kremenchuk, Simpheropol, Lutsk, Nikopol, Sevastopol and Khmelnytsky (Khmelnytsky PZ TM). This, in its turn, means that these enterprises are not able to repay their current liabilities and extend its further activity. The worst working capital indicators belong to the enterprises Pavlograd TE (-73514 thousand UAH) and Chernihiv OTKE (-49571 thousand UAH).

The wearing out level of fixed assets (based on bookkeeping data) fluctuates from 4% to 77%. The average value of the indicator is 46%. The highest value belongs to Komsomolsk TKE (77%), Myrgorod TE (63%) and Pavlograd TE (60%). The lowest value is that of the enterprise of Voznesensk (4%), which is significantly lower than indicators of the other enterprises. The next lowest value is 26% of Kramatorsk MRT. Values of this indicator for all the enterprises are shown in annex 7.

## 5. Assessment of capital investment volumes and the structure of their funding sources

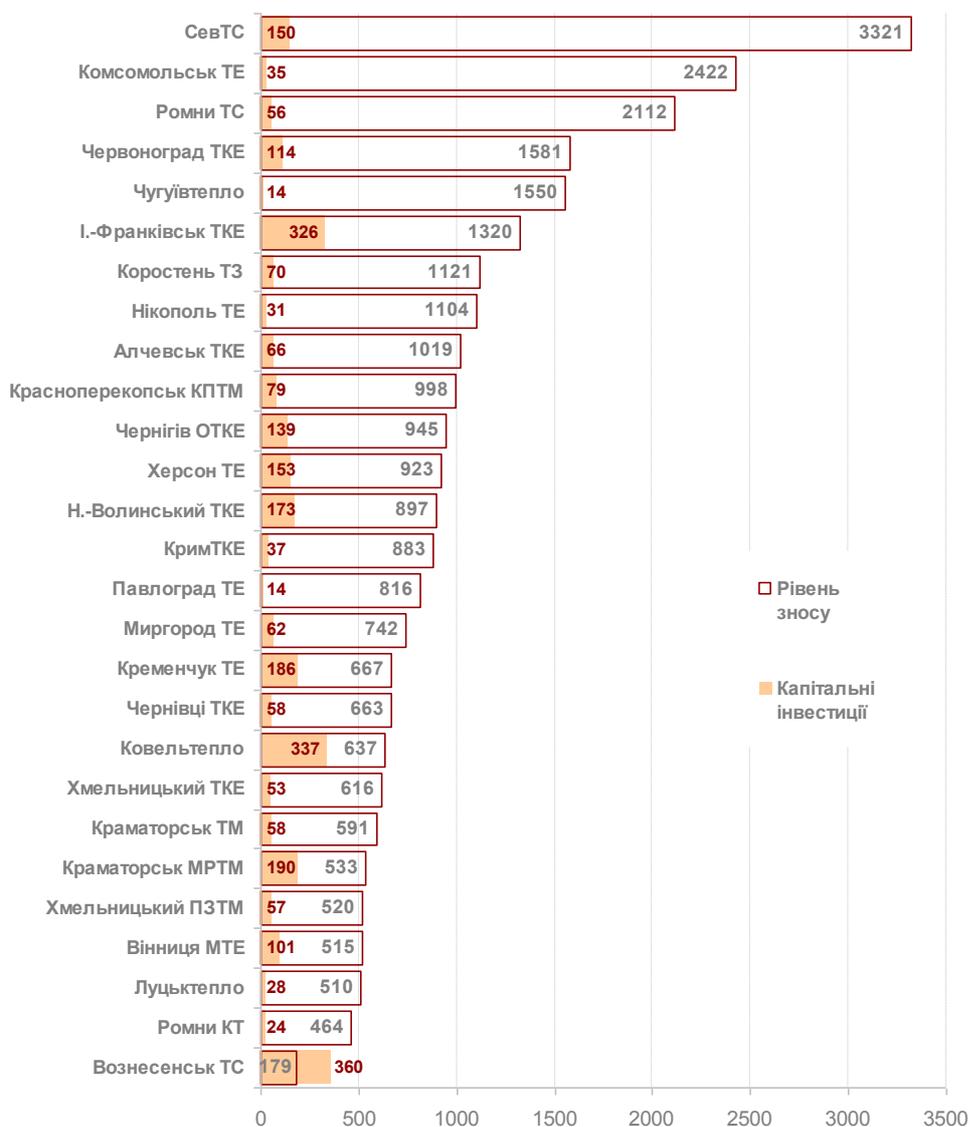
Results of indicators calculation within this section for all pilot enterprises are shown in annex 9. Capital investment volumes indicators calculated per subscriber and wearing out of fixed assets calculated per one subscriber for the enterprises of Lviv and Rivne were not defined due to lack of compatible data on the number of subscribers.

Volumes of capital investments calculated per subscriber vary from 14 to 360 UAH/subscriber/year. The average value of this indicator is 102 UAH/subscriber/year. The highest values of this indicator belong to the enterprises of Voznesensk (360 UAH/subscriber/year), Kovel (337 UAH/subscriber/year), Ivano-Frankivsk (327 UAH/subscriber/year). For 90% of enterprises this indicator does not exceed 190 UAH/subscriber/year. The lowest values of this indicator – 14 UAH/subscriber/year – belong to the enterprises of Pavlograd and Chuhuiv.

Indicators of wearing out and capital investments of pilot enterprises calculated per subscriber based on data of 2009 are represented in chart 11.

Chart 11

### Indicators of wearing out and capital investments of pilot enterprises in 2009



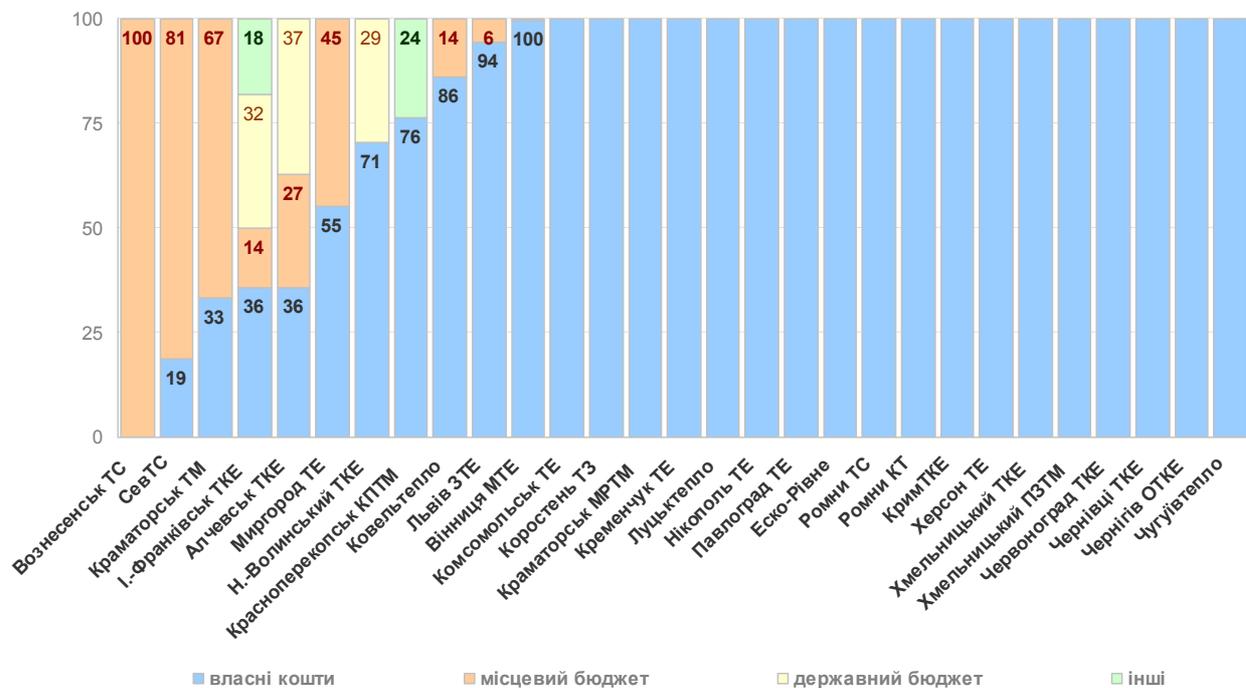
The diagram demonstrates that indicators of fixed assets wearing out calculated per one subscriber fluctuate from 179 to 3321 UAH/subscriber/year. The average value is 953 UAH/subscriber/year.

The highest values belong to Sevastopol SevTS (3321 UAH/subscriber/year) and Komsomolsk TKE (2422 UAH/subscriber/year), which considerably exceed both the average and values of the other enterprises. For the other enterprises the value of this indicator is below 2200 UAH/subscriber/year. The lowest values belong to Voznesensk TS (179 UAH/subscriber/year) and Romny TS (464 UAH/subscriber/year).

The structure of capital investments funding sources is represented in chart 12.

Chart 12

### The structure of capital investment funding sources in 2009



The diagram demonstrates well that own funds of enterprises remain the most reliable source of capital investments funding. The average value of own funds in the sources structure for all the enterprises is 83%. The second largest is the part of funds from local budgets, the average value for which is 12%, followed by funds from the state budget (3%), other sources (1%). Unfortunately, none of pilot enterprises involved bank loans for investment purposes. Such trends are conditioned by low solvency of heating enterprises, the crisis in the banking sector of the Ukrainian economy and instability of the economic situation in the country, high interest rates of local banks.

For 19 out of the 29 enterprises own funds were the only source of funding capital investments. The enterprise of Voznesensk was the only one that did not use own funds for funding capital investments.

Only 7 enterprises used funds of local budgets as a source of funding. For Voznesensk TS funds of the local budget appeared the only source of funding capital investments. The part of funds from local budgets in the structure of capital investments funding sources is the largest at the enterprises of Sevastopol (81%) and Kramatorsk (67%). The lowest part is observed for Lviv ZTE (6%).

Funds of the state budget were used by only 3 enterprises: Alchevsk TKE (37%), Ivano-Frankivsk TKE (32%) and Novograd-Volynsky TKE (29%). For Alchevsk and Ivano-Frankivsk this is conditioned by the extraordinary situations (ecocatastrophes), for liquidation of which funds from the state budget were allocated.

Other sources (based on data of form No.2-investments) were only used by the enterprises of Ivano-Frankivsk (18%) and Krasnoperekopsk (24%).

The indicator of capital investments calculated per city resident varies from 0 to 68 UAH/person/year. The average value of the indicator is 14 UAH/person/year. The lowest values belong to Sevastopol SevTS (0 UAH/person/year), Esco-Rivne (0 UAH/person/year), Romny TS (2 UAH/person/year). The highest values are observed for KovelTeplo (68 UAH/person/year) and I.-Frankivsk TKE (58 UAH/person/year).

The indicator of wearing out of fixed assets calculated per city resident varies from 2 to 934 UAH/person/year. The average value of the indicator is 159 UAH/person/year. The lowest values belong to Voznesensk TS (2 UAH/person/year), Sevastopol SevTS (3 UAH/person/year), Esco-Rivne (10 UAH/person/year). The highest values are observed for Komsomolsk TKE (934 UAH/person/year) and ChuhuivTeplo (421 UAH/person/year).

Indicators of capital investments and wearing down (calculated per city resident) were not calculated for the enterprises KrymTKE and Chernihiv OTKE, as these enterprises serve more than one settlement and the indicator of the number of residents for this indicator's calculation is not compatible.

Thus, the analysis conducted proves a low level of investments into infrastructure objects of pilots cities compared with the needs of updating fixed assets. Wearing out calculated per subscriber (and resident) considerably exceeds the amount of investments. It is evident that some cities support involvement of investments into communal infrastructure, which is demonstrated by the funding allocated for these purposes from municipal budgets.

## **6. Aggregation of result of pilot enterprises' performance assessment**

For the purpose of generalizing results of the express assessment conducted, rating assessment of the pilot enterprises' performance indicators was conducted based on three groups of indicators: quantity indicators, energy efficiency indicators, and solvency indicators.

### ***6.1 Rating assessment by quantity indicators***

For the purpose of generalizing results of express assessment of the number of staff at pilots enterprises, the following indicators list was used:

- specific number of staff calculated per 1 km of the network;
- specific number of staff calculated per 1000 Gkal of thermal energy produced;
- specific number of staff calculated per 1000 subscribers in total for the enterprise;
- specific number of staff calculated per 1000 subscribers of the population group;
- labor efficiency.

#### ***Rating assessment method***

Values of these indicators for every individual enterprise were assessed from 0 to 2 points. The maximum number of points that an enterprise can get is 10.

Distribution of points was carried out based on the following criteria. For the enterprises where the value of specific quantity indicators is:

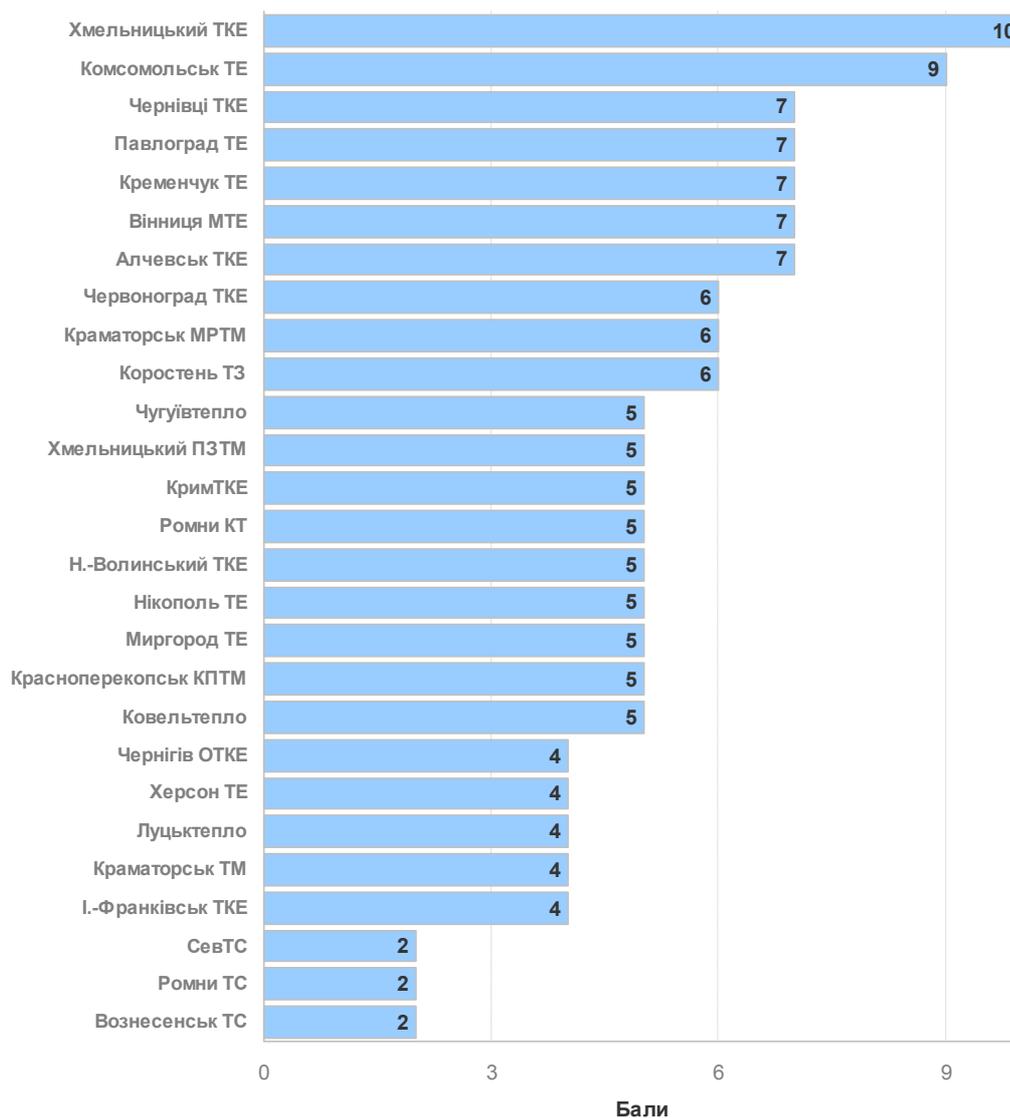
- below the average – 2 points;
- close to the average (within the standard deviation) – 1 point;
- above the average – 0 points.

The reverse assessment principle was applied to the labor efficiency indicator, where the maximum number of points was obtained by the enterprises whose value is above the average, 1 point – those close to the average, the minimum of 0 points – below the average.

The results of rating assessment of pilot enterprises based on specific quantity indicators are represented in chart 13.

The highest rating by the quantity indicators belongs to the enterprise Khmelnytsky TKE, which obtained the maximum number of points. 9 points out of the 10 possible was obtained by the enterprise of Komsomolsk. The lowest rating (2 points) characterizes the enterprises Voznesensk TS, Romny TS and Sevastopol SevTS. Indicators of Lviv and Rivne were not included into the quantity rating assessment because of lack of compatible data on the number of subscribers.

### Rating assessment of pilot enterprises based on specific quantity indicators



### 6.2 Rating assessment by energy efficiency indicators

For the purpose of generalizing results of express assessment of energy efficiency at pilots enterprises, the following indicators list was used:

- specific use of fuel for technological needs;
- specific use of electric power for technological needs;
- losses of thermal energy.

#### *Rating assessment method*

Values of these indicators for every individual enterprise were assessed from 0 to 2 points. The maximum number of points is 6.

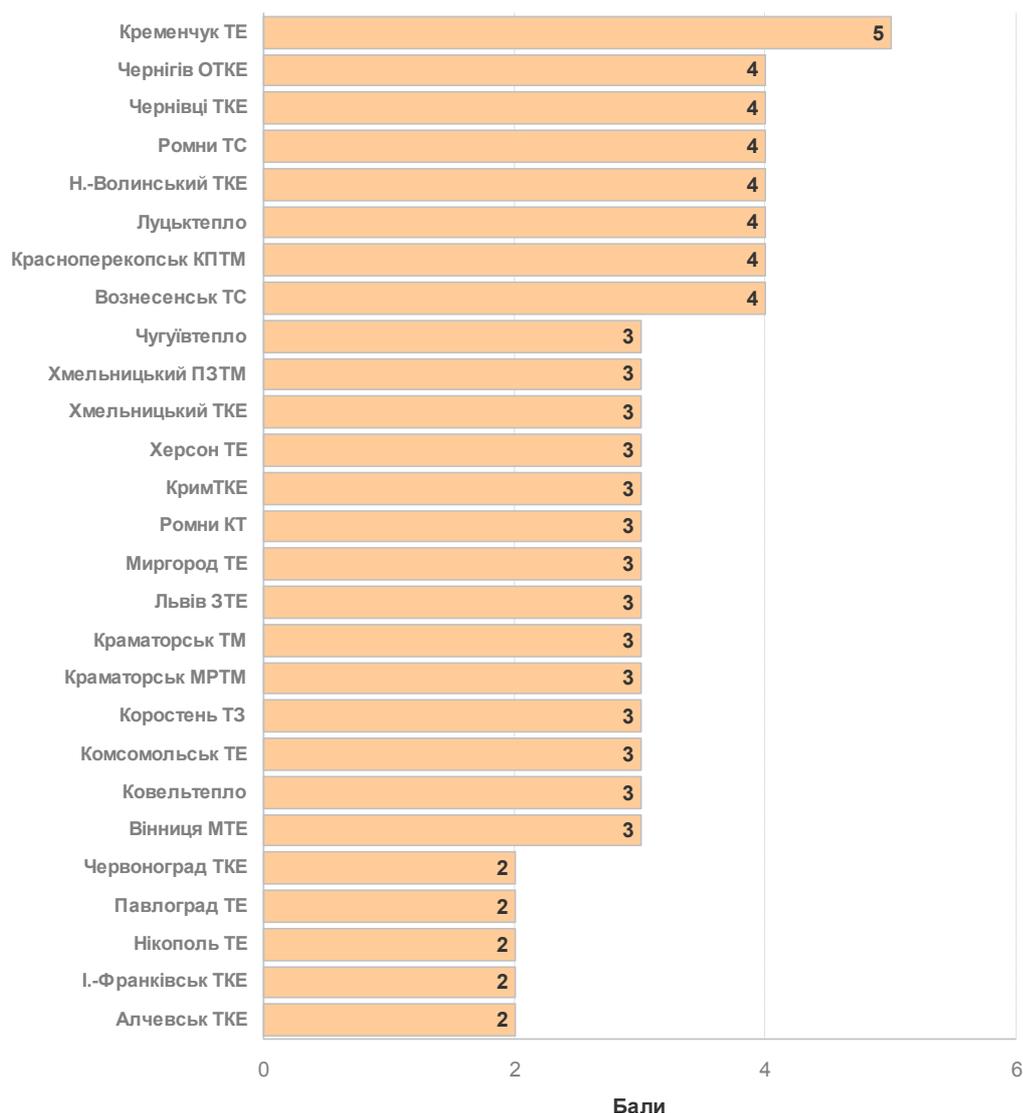
Distribution of points was carried out based on the following criteria. For the enterprises where the value of energy efficiency indicators is:

- below the average – 2 points;
- close to the average (within the standard deviation) – 1 point;
- above the average – 0 points.

The results of rating assessment of pilot enterprises based on energy efficiency indicators are represented in chart 14.

Chart 14

## Rating assessment of pilot enterprises based on energy efficiency indicators



The highest rating by energy efficiency indicators belongs to the enterprise Kremenchuk TE, which obtained 5 points out of 6. The lowest rating belongs to the enterprises of Chervonograd, Pavlograd, Nikopol, Ivano-Frankivsk and Alchevsk (2 points each). Indicators of the enterprises of Sevastopol and Rivne were not included into the rating assessment by energy efficiency indicators due to lack of thermal networks on the balance of these enterprises.

### 6.3 Rating assessment by solvency indicators

*Solvency* is availability of pre-conditions for receiving a credit and the capability to repay it. Solvency of the borrower is defined based on the indicators that characterize the latter's capability to timely repay previously obtained credits, current financial status, opportunity in case of necessity to mobilize funds from different sources and to provide for quick conversion of assets in liquid funds.

Banks (investors, borrowers) have their own systems of indicators and methods of assessing the financial status of the borrower. The list of indicators defined for this purpose is also different. For the purposes of generalizing results of the express assessment of the project's pilot enterprises, the following list of indicators was used:

- profitability of main activity;
- profitability of routine activity;
- average term of accounts payable repayment;

- average term of current liabilities repayment;
- actual debt coverage coefficient;
- current liquidity coefficient;
- working capital of the enterprise;
- level of fixed assets' wearing out;
- fee collection level;
- capital investments volumes calculated per subscriber.

For the rating assessment, the value of these indicators for every individual enterprise were assessed from 0 to 2 points. The maximum number of points – 20.

The criteria of assessing solvency indicators for every individual enterprise are shown in table 2.

Table 2

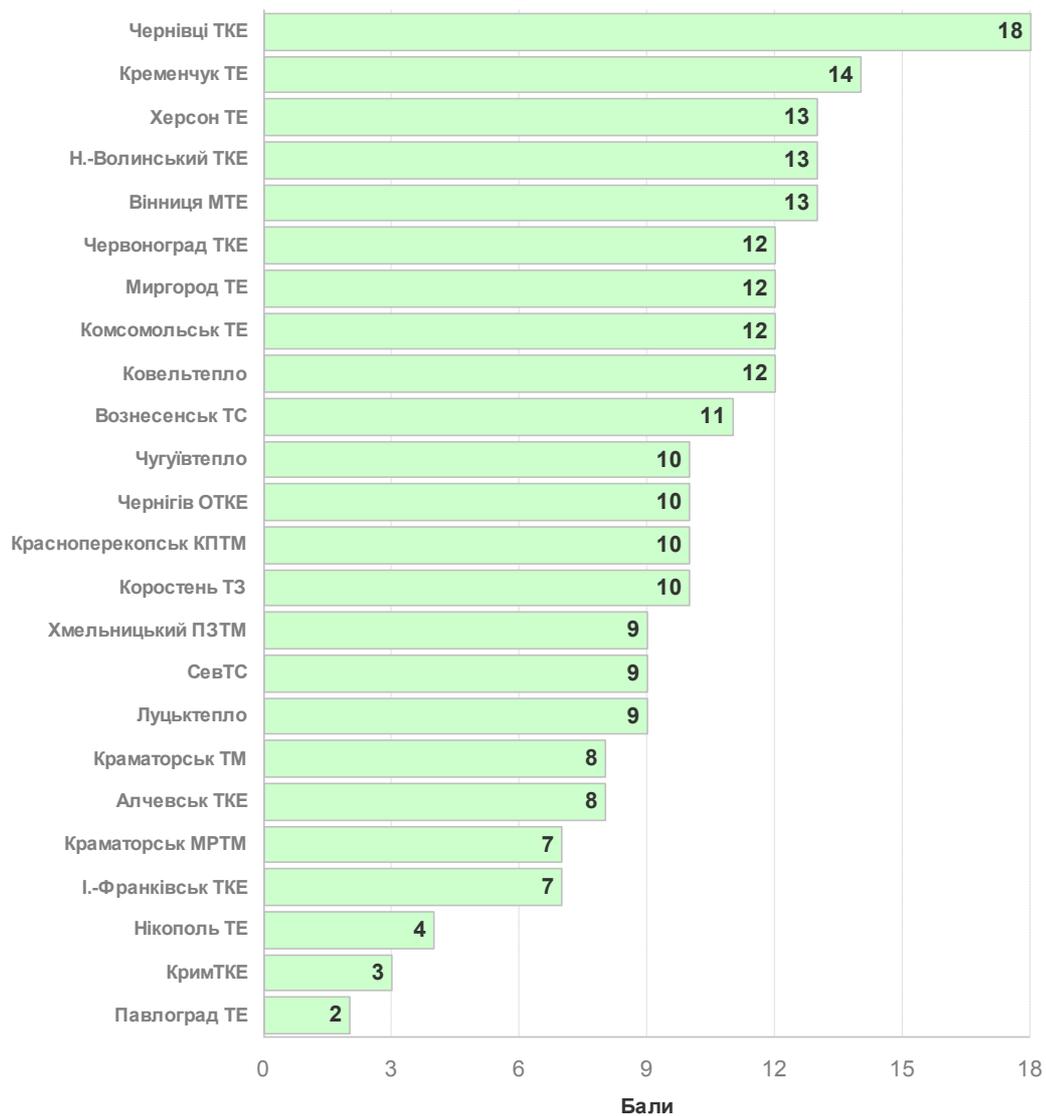
### Solvency indicators assessment criteria

Indicator	Value ranges		
	Number of points		
	0	1	2
profitability of main activity (%)	$x \leq 0$	$0 < x \leq 8$	$8 < x$
profitability of routine activity (%)	$x \leq 0$	$0 < x \leq 10$	$10 < x$
average term of accounts payable repayment (months)	$6 < x$	$3 < x \leq 6$	$x \leq 3$
average term of current liabilities repayment (months)	$6 < x$	$3 < x \leq 6$	$x \leq 3$
actual debt coverage coefficient	$x \leq 0$	$0 < x \leq 1$	$1 < x$
current liquidity coefficient	$x \leq 0.9$	$0.9 < x \leq 1$	$1 < x$
working capital of the enterprise (UAH)	$x \leq 0$	-	$0 < x$
level of fixed assets' wearing out (%)	$x < 50$	-	$50 \leq x$
fee collection level (%)	$x \leq 50$	$50 < x \leq 70$	$70 < x$
capital investments volumes calculated per subscriber (UAH/subscriber/year)	$x \leq 100$	$100 < x \leq 200$	$200 < x$

The results of rating assessment of pilot enterprises based on solvency indicators are represented in chart 15.

Chart 15

## Rating assessment of solvency indicators of pilot enterprises



The highest rating by solvency indicators belongs to the enterprise of Chernivtsi, which obtained 18 points out of the maximally possible 20, 14 points were attributed to Kremenchuk TE. The lowest rating characterizes the enterprises of Pavlograd (2 points), Simferopol (3 points) and Nikopol (4 points).

*The rating assessment does not include solvency indicators of the enterprises Romny KT, Escorivne, Lviv ZTE, Khmelnytsky TKE and Romny TS for the reasons described in detail in section 4.5 of this report.*

## **7. Conclusions and recommendations regarding technical assistance directions**

Table 3 summarizes information about strengths and weaknesses of every enterprise whose activity was analyzed in this report, as well as defines general directions for improvement of the enterprises' operation and reference points for defining priorities of the MHR project when providing technical assistance to respective enterprise.

The enterprises that, based on the rating assessment of energy efficiency indicators (see chart 13) have ratings lower than the average (19 enterprises out of 27) require implementation in the short-term perspective of energy efficiency measures.

Financial provision of such measures can be carried out due to including the investment component into the tariffs, involvement of corporate investors subject to concession terms, involvement of credit resources and loans of commercial banks and international financial institutions; leasing (leasing companies, producers of equipment, energy servicing companies (ESCO)), etc.

The enterprises that based on the rating assessment of solvency indicators (see chart 14) have a rating higher than the average (10 enterprises out of 24) are ready to work in the direction of business planning, the enterprises whose rating below the average need improvement of their business processes, pricing, accounting and reporting system.

The financial status of the majority of heating enterprises remains critical, which in its turn deprives them of the possibility to develop production, replenish working assets, update fixed assets, carry out measures related to preparation for the heating season. From the point of view of investors and lenders heating enterprises have low solvency level and are non-competitive in the credit resources market.

Summarizing everything abovementioned, it is possible to state that almost a half of the enterprises whose performance indicators were analyzed must carry out a number of organizational measures aimed at improvement of financial and economic indicators of their activity to get ready for the next step – business planning for involvement in investment resources.

Table 3

**Summarizing of the report and recommendations regarding the directions for performance indicators of the enterprises from MHR project partner cities**

<b>Name</b>	<b>Positive (strong) aspects</b>	<b>Negative (weak) aspects</b>	<b>Directions for improvement of the enterprises' performance indicators</b>	<b>Priority directions for technical assistance provision within the project</b>
<b>Alchevsk TKE</b>	The lowest average annual fuel cost Profitable activity	The lowest rating by energy efficiency indicators (2 out of 8) The highest specific electric power use for technological needs Low terms of accounts payable and current liabilities repayment	Improving the sale of services practice and reduction of accounts payable Improving liquidity indicators Introducing double-rate tariffs for all consumer groups Improving pricing (in the part of timely update of tariffs)	Improving pricing Financial planning Sale of services (litigation work with consumers)
<b>Vinnytsya MTE</b>	The highest indicators of main and routine activity profitability Introduced double-rate tariffs for all consumer groups (from 2008) Quick term of accounts payable repayment		Increasing the salary level at the enterprise to retain qualified staff	Business and investment planning
<b>Voznesensk TS</b>	The lowest TE losses indicator Introduced double-rate tariffs for all consumer groups High fee collection level (one of the highest values) Low level of fixed assets wearing out (one of the lowest values) The only enterprise where capital	Low rating by number of staff indicators Non-profitable activity Do not provide HWS services The highest specific use of fuel for technological needs	Requires reviewing the number of staff (bringing down to objective needs) Improving the financial status Improving pricing for population	Improving pricing

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
	<p>investments are higher than wearing out</p> <p>High level of capital investments (calculated per subscriber)</p>			
<b>I.-Frankivsk TKE</b>	<p>Introduced double-rate tariffs for population (since 2001)</p> <p>High level of capital investments (calculated per subscriber)</p>	<p>Low rating by number of staff indicators</p> <p>The lowest rating by energy efficiency indicators (2 3 8)</p> <p>Unprofitable main activity</p> <p>Low level of costs compensation with current tariffs (the lowest value)</p> <p>The highest TE losses indicator</p>	<p>Improving the pricing practice and policy for population</p> <p>Introducing double-rate tariffs for budgetary facilities and other consumers</p> <p>Technical re-equipment (update) of fixed assets, costs reduction</p>	<p>Improving pricing</p> <p>Financial planning</p> <p>Improving the accounting system</p>
<b>KovelTeplo</b>	<p>Profitable activity</p> <p>High level of costs compensation with current tariffs for other consumers (the highest value)</p> <p>Quick term of accounts payable repayment</p> <p>High level of capital investments (calculated per subscriber)</p> <p>Low level of fixed assets wearing out</p>	<p>Negative value of the working capital</p>	<p>Introducing double-rate tariffs for all consumer groups</p> <p>Repayment of previous years' arrears</p>	<p>Improving the pricing practice and policy</p> <p>Financial planning</p> <p>Improving the accounting system</p>
<b>Komsomolsk TE</b>	<p>High rating of quantity indicators</p> <p>Profitable activity</p> <p>High level of costs compensation</p>	<p>Insufficient provision with the staff (low number of staff)</p> <p>High level of fixed assets wearing out (one of the highest)</p>	<p>Introducing double-rate tariffs for all consumer groups</p> <p>Selection of staff, increasing the salary level at the enterprise to retain</p>	<p>Improving pricing</p> <p>Business and investment planning</p>

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
	with current tariffs for population (the highest value) Quick terms of accounts payable and current liabilities repayment	values)	qualified staff Technical re-equipment (update) of fixed assets	
<b>Korosten TZ</b>	Introduced double-rate tariffs for all consumer groups (since 2007) Quick terms of accounts payable and current liabilities repayment	Unprofitable main and routing activity	Improving activity of technical services to provide for energy efficiency and capital planning practice	Improvement of energy planning Business and investment planning
<b>Kramatorsk MRTM</b>	Introduced double-rate tariffs for all consumer groups (since 2007)	Excessive number of staff Unsatisfactory financial status Unprofitable main and routing activity Low term of current liabilities repayment	Staff number requires reviewing (bringing down to objective needs) Improving the financial status	Improving the pricing practice Improving the accounting system and reporting
<b>Kramatorsk TM</b>	High level of costs repayment with current tariffs for budgetary facilities and other consumers (the highest value) Low level of fixed assets wearing out	Excessive number of staff, Unprofitable main and routing activity Low fee collection level (one of the lowest values) Low terms of accounts payable and current liabilities repayment	Requires reviewing the number of staff (bringing down to objective needs) Improving the financial status Technical re-equipment (update) of fixed assets	Improving the pricing practice Financial planning
<b>Krasnoperekopsk CHNE</b>	Introduced double-rate tariffs for all consumer groups (since 2007) Profitable activity The highest rating by energy	Do not provide HWS services The highest TE losses indicator	Technical re-equipment (update) of fixed assets, costs reduction	Business and investment planning

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
	efficiency indicators The lowest specific use of fuel for technological needs The highest specific electric power use for technological needs			
<b>Kremenchuk TE</b>	The highest rating by energy efficiency indicators The highest rating by solvency indicators The highest value of the specific supply per subscriber (population group) Profitable activity Quick terms of accounts payable and current liabilities repayment	Negative value of the working capital (insignificant)	Introducing double-rate tariffs for all consumer groups Improving the financial status	Improving the pricing practice Improving the accounting and reporting system Business and investment planning
<b>LutskTeplo</b>	One of the highest ratings by energy efficiency The highest value of specific supply per one subscriber Low level of fixed assets wearing out (one of the lowest values) High fee collection level Quick term of accounts payable repayment	Negative value of the working capital Unprofitable main and routing activity	Introducing double-rate tariffs for all consumer groups Improving the financial status	Improving the pricing practice Improving the accounting and reporting system
<b>Lviv ZTE</b>	Introduced double-rate tariffs for all consumer groups (since 2006) Profitable activity			Business and investment planning

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
	<p>Quick terms of accounts payable and current liabilities repayment</p> <p>Low level of fixed assets wearing out</p>			
<b>MyrgorodTE</b>	<p>Profitable activity</p> <p>The highest level of costs repayment with the current tariffs for population</p> <p>Quick terms of accounts payable and current liabilities repayment</p>	<p>High part of managers in the staff number structure and of labor payment costs in the costs structure</p> <p>High level of fixed assets wearing out</p> <p>Do not provide HWS services</p>	<p>Improving the staff policy</p> <p>Introducing double-rate tariffs for all consumer groups</p> <p>Technical re-equipment (update) of fixed assets</p> <p>Improving capital planning practice and policy</p>	<p>Improving pricing</p> <p>Business and investment planning</p>
<b>NikopolTE</b>		<p>The lowest rating by energy efficiency indicators (2 out of 8)</p> <p>The lowest rating by solvency criteria</p> <p>Negative value of the working capital</p> <p>Unprofitable activity (have one of the lowest values)</p> <p>Do not provide HWS services</p> <p>The highest TE losses indicator</p> <p>Low term of current liabilities repayment</p>	<p>Complex improvement of business processes</p> <p>Introducing double-rate tariffs for all consumer groups</p> <p>Improving the financial status</p> <p>Technical re-equipment (update) of fixed assets, costs reduction</p>	<p>Improving pricing</p> <p>Business and investment planning</p> <p>Improvement of energy planning</p>
<b>Novograd-Volynsky TKE</b>	<p>Quick terms of accounts payable and current liabilities repayment</p>	<p>Unprofitable main and routing activity</p>	<p>Introducing double-rate tariffs for all consumer groups</p>	<p>Improving pricing</p> <p>Business and investment</p>

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
		HWS services are only provided in the heating season	Improving the financial status	planning
<b>Pavlograd TE</b>		<p>The lowest rating by energy efficiency indicators (2 3 8)</p> <p>Low rating by solvency indicators</p> <p>Negative value of the working capital</p> <p>Unprofitable main and routing activity</p> <p>Do not provide HWS services</p> <p>Low fee collection level (one of the lowest values)</p> <p>Low terms of accounts payable and current liabilities repayment</p> <p>High level of fixed assets wearing out</p>	<p>Complex improvement of business processes</p> <p>Providing for previous years' accounts payable coverage</p> <p>Technical re-equipment (update) of fixed assets</p>	<p>Improving pricing</p> <p>Improving the accounting and reporting system</p> <p>Business and investment planning</p>
<b>Esco-Rivne</b>	<p>Profitable routine activity</p> <p>Quick terms of accounts payable and current liabilities repayment</p>	<p>Unprofitable main activity</p> <p>Low level of costs compensation with the current tariffs for budgetary facilities (the lowest value)</p> <p>High level of average annual costs of fuel, electric power, labor payment</p>	Introducing double-rate tariffs for all consumer groups	<p>Improving pricing</p> <p>Improving the accounting and reporting system</p> <p>Business and investment planning</p>
<b>Romny KT</b>	Profitable routine activity	HWS services are only	Introducing double-rate tariffs for all	Improving pricing

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
	Low level of fixed assets wearing out (one of the lowest values)	provided for budgetary facilities Unprofitable main activity	consumer groups Improving the financial status	Improving the accounting and reporting system
<b>Romny TS</b>	The lowest TE losses indicator Profitable activity	High share of managers Low quantity rating Extremely low average annual salary The lowest value of specific supply per one subscriber HWS services are only provided for 1 building High level of fixed assets wearing out (one of the highest values)	Introducing double-rate tariffs for all consumer groups Technical re-equipment (update) of fixed assets	Improving pricing Improving the accounting and reporting system
<b>Sevastopol SevTS</b>	The highest value of specific supply per one subscriber (budgetary facilities and other consumer groups) High fee collection level (one of the highest values) Quick terms of accounts payable and current liabilities repayment Introduced double-rate tariffs for population (since 2010)	Low quantity rating Excessive number of staff High share of managers Negative value of the working capital (insignificant) Unprofitable main and routing activity (the lowest value) Low level of costs compensation with current tariffs (the lowest value) Low level of costs compensation with the current tariffs for budgetary facilities	Introducing double-rate tariffs for budgetary facilities and other consumers Improving the financial status Repayment of previous years' accounts payable Staff number requires reviewing (bringing down to objective needs)	Improving pricing Improving the accounting and reporting system

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
		(the lowest value) High level of fixed assets wearing out (one of the highest values)		
<b>Simpheropol KrymTKE</b>	Profitable routine activity	Low rating by solvency indicators Negative value of the working capital Low level of costs repayment with net charged incomes (the lowest value) Low terms of accounts payable and current liabilities repayment	Introducing double-rate tariffs for all consumer groups Providing for previous years' accounts payable coverage Improving litigation work with consumers	Improving pricing Sale of services Business and investment planning
<b>Kherson TE</b>	Profitable main activity	Unprofitable main and routing activity HWS services are only provided in the heating season	Introducing double-rate tariffs for all consumer groups Improving the financial status	Improving pricing
<b>Khmelnysky TKE</b>	High rating of quantity indicators One of the best solvency ratings The highest indicators of main and routine activity profitability High level of costs repayment with current tariffs for budgetary facilities (the highest value) High level of costs compensation with net charged incomes (the highest value)	The highest part of fuel costs in the costs structure (dependence on the change of fuel prices)	Introducing double-rate tariffs for all consumer groups	Improving pricing Business and investment planning Improvement of energy planning

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
	Quick terms of accounts payable and current liabilities repayment			
<b>Khmelnysky PZ TM</b>	Profitable activity High fee collection level (one of the highest values) Quick terms of accounts payable and current liabilities repayment	Negative value of the working capital	Introducing double-rate tariffs for all consumer groups	Improving pricing Business and investment planning
<b>Chervonograd TKE</b>	Quick term of current liabilities repayment	Excessive number of staff Unprofitable main and routing activity The lowest debt coverage coefficient HWS services are only provided in the heating season (according to the schedule 3 days a week) The highest specific use of fuel for technological needs Low level of costs repayment with net charged incomes (the lowest value) Low rating by energy efficiency indicators	Introducing double-rate tariffs for all consumer groups Staff number requires reviewing (bringing down to objective needs) Implementing energy efficiency measures	Improving pricing
<b>Chernivtsi TKE</b>	High rating of quantity indicators Introduced double-rate tariffs for all consumer groups (since 2009) High profitability indicators for	Do not provide HWS services Low fee collection level (one of the lowest values)	Improving litigation work with consumers	Sale of services Financial planning

Name	Positive (strong) aspects	Negative (weak) aspects	Directions for improvement of the enterprises' performance indicators	Priority directions for technical assistance provision within the project
	<p>main and routine activity (one of the highest values)</p> <p>High level of costs compensation with net charged incomes (the highest value)</p> <p>The highest rating by solvency indicators</p> <p>Quick terms of accounts payable and current liabilities repayment</p>			
<b>Chernihiv OTKE</b>	<p>The highest routine activity profitability indicators</p> <p>Quick term of accounts payable repayment</p>	<p>Unprofitable main activity</p> <p>Negative value of the working capital</p>	<p>Introducing double-rate tariffs for all consumer groups</p> <p>Improving financial status indicators</p>	<p>Improving pricing</p>
<b>ChuhivTeplo</b>	<p>Profitable main activity</p> <p>Quick term of accounts payable repayment</p>	<p>Unprofitable routine activity</p> <p>Do not provide HWS services</p> <p>Low level of capital investments (calculated per subscriber)</p>	<p>Introducing double-rate tariffs for all consumer groups</p> <p>Improving financial status indicators</p>	<p>Improving pricing</p>

## ANNEXES

## Annex 1

**Sources of input data for express assessment of the heating enterprises' performance results:**Financial statements:

- Balance sheet (form No.1)
- Report on financial results (form No.2)
- Report on monetary funds circulation (form No.3)

Statistical reporting:

- Report on production costs and financial performance indicators of enterprises related to provision of heating services (form No.1-c)
- Thermal energy supply report (form No.1-теп)
- Report on results of using fuel, thermal energy and electric power (form No.11-MTP)
- Report on key indicators of the enterprise's activity (form No.1-enterprise)
- Capital investments report (form No. 2-investments)
- Labor report (form No.1-PV, annual)

Analytical data (questionnaire) of the enterprise:

- information on tariffs,
- number of subscribers,
- the largest creditors, etc.

City statistical data :

- number of city residents,
- average salary level in the city.

## Indicators of the number of staff at pilot enterprises in 2009

Indicators	Staff structure		Specific indicators of the number of staff calculated:				Labor efficiency
	managers, professionals, specialists	workers, servicing staff	per 1 km of the network	per 1000 Gkal of thermal energy produced	per 1000 subscribers (total for the enterprise)	per 1000 subscribers (population group)	
<i>Unit</i>	<i>%</i>	<i>%</i>	<i>persons/km</i>	<i>persons/1000 Gkal</i>	<i>persons/1000 subscribers</i>	<i>persons/1000 subscribers</i>	<i>Gkal/workers</i>
Alchevsk TKE	17	83	4	2	14	14	563
Vinnitsya MTE	23	77	5	2	11	11	649
Voznesensk TS	13	87	2	7	85	96	135
I.-Frankivsk TKE	21	79	6	2	23	23	615
KovelTeplo	18	82	5	3	22	23	329
Komsomolsk TE	25	75	4	1	10	10	981
Korosten TZ	29	71	5	2	15	15	887
Kramatorsk MRTM	17	83	7	2	14	14	638
Kramatorsk TM	29	71	7	2	19	20	424
Krasnoperekopsk CHNE	33	67	4	4	12	13	222
Kremenchuk TE	16	84	4	3	13	13	403
LutskTeplo	18	82	7	2	17	17	482
Lviv ZTE	23	77	3	1	-	-	775
Myrgorod TE	38	62	5	2	19	20	395
Nikopol TE	24	76	3	2	22	22	467
N.-Volynsk TKE	21	79	5	2	19	20	520
Pavlograd TE	16	84	3	2	13	14	484
Esco-Rivne	25	75	-	2	-	-	397
Romny TS	35	65	5	3	15	15	276
Romny KT	28	72	4	2	21	22	476
SevTS	38	63	-	5	53	54	157
KrymTKE	20	80	5	2	19	19	562
Kherson TE	23	77	5	2	15	15	445
Khmelnysky TKE	21	79	3	1	13	13	834
Khmelnysky PZTM	32	68	4	2	16	16	660
Chervonograd TKE	20	80	3	2	23	23	636
Chernivtsi TKE	20	80	6	2	14	14	623
Chernihiv OTKE	18	82	7	2	21	21	465
ChuhuivTeplo	20	80	4	2	16	17	593

## Annex 3

## Thermal energy supply indicators for consumers in 2009

Indicators	Specific TE supply indicators (calculated per subscriber):			Structure of TE supply for consumers:		
	total for the enterprise	population	budgetary and other consumers	population	budgetary facilities	other consumers
<i>Unit</i>	<i>Gkal/1 subscriber</i>	<i>Gkal/1 subscriber</i>	<i>Gkal/1 subscriber</i>	<i>%</i>	<i>%</i>	<i>%</i>
Alchevsk TKE	6.37	5.18	120	81	16	4
Vinnitsya MTE	6.28	5.40	94	85	11	4
Voznesensk TS	10.47	5.10	53	42	53	5
I.-Frankivsk TKE	9.86	7.47	198	73	21	5
KovelTeplo	7.09	5.87	61	81	16	3
Komsomolsk TE	8.79	7.70	75	86	10	4
Korosten TZ	8.09	6.21	133	76	14	10
Kramatorsk MRTM	7.15	6.38	63	88	8	4
Kramatorsk TM	7.07	6.41	51	89	8	3
Krasnoperekopsk CHNE	7.40	6.04	240	81	18	1
Kremenchuk TE	10.71	9.33	92	86	9	5
LutskTeplo	11.01	8.79	151	80	13	7
Lviv ZTE	-	-	-	89	9	2
Myrgorod TE	9.33	7.84	55	81	15	4
Nikopol TE	6.86	5.69	56	81	12	6
N.-Volynsk TKE	8.31	6.24	84	73	20	7
Pavlograd TE	5.03	4.04	60	79	15	6
Esco-Rivne	-	-	-	5	95	1
Romny TS	3.78	3.37	28	79	10	12
Romny KT	8.77	5.67	76	62	32	6
SevTS	10.40	6.05	523	58	42	0
KrymTKE	9.20	7.59	154	82	15	4
Kherson TE	5.52	4.45	108	80	15	5
Khmelnitsky TKE	9.18	7.55	75	80	14	5
Khmelnitsky PZTM	8.98	7.56	143	83	14	3
Chervonograd TKE	10.44	8.35	74	77	16	6
Chernivtsi TKE	7.85	6.28	180	79	17	4
Chernihiv OTKE	8.82	7.51	79	76	21	3
ChuhuvTeplo	7.79	6.16	99	78	18	4

### Indicators of loss of thermal energy and use of fuel and electric power for technological needs of pilot enterprises in 2009

Indicators	Thermal energy losses	Specific losses of fuel for technological needs	Specific losses of electric power for technological needs	Average annual use of fuel	Average annual use of electric power	Average monthly costs of staff worker labor payment
<i>Unit</i>	<i>%</i>	<i>kg.c.e./Gkal</i>	<i>kW-hour/thousand Gkal</i>	<i>UAH/tons of c.e.</i>	<i>UAH/kW-hour</i>	<i>UAH/person/month</i>
Alchevsk TKE	13	161	67	681	0.54	1626
Vinnytsya MTE	14	160	28	812	0.52	2261
Voznesensk TS	8	172	41	1301	0.61	614
I.-Frankivsk TKE	32	165	38	974	0.27	1695
KovelTeplo	15	154	25	957	0.51	1520
Komsomolsk TE	15	162	43	782	0.62	2496
Korosten TZ	11	162	29	945	0.59	1536
Kramatorsk MRTM	15	169	35	774	0.60	2103
Kramatorsk TM	14	160	38	761	0.60	1745
Krasnoperekopsk CHNE	29	47	5	841	-	2126
Kremenchuk TE	14	66	13	1956	0.63	2428
LutskTeplo	13	104	27	958	0.58	2161
Lviv ZTE	16	166	36	765	0.51	2484
Myrgorod TE	11	168	32	783	0.60	2517
Nikopol TE	29	165	52	879	0.50	1810
N.-Volynsk TKE	10	159	34	975	0.59	1601
Pavlograd TE	20	164	54	894	0.51	1808
Esco-Rivne	0	90	11	1605	0.99	3026
Romny TS	9	165	38	669	0.60	1550
Romny KT	13	168	30	960	0.61	1431
SevTS	1	156	11	1099	1.15	2496
KrymTKE	14	165	37	845	0.61	2371
Kherson TE	14	160	45	888	0.52	1621
Khmelnysky TKE	18	152	30	915	0.13	1748
Khmelnysky PZTM	12	158	30	827	0.44	1736
Chervonograd TKE	20	173	26	876	0.67	1537
Chernivtsi TKE	10	162	36	898	0.59	2086
Chernihiv OTKE	9	159	44	1168	0.59	1897
ChuhuiivTeplo	16	163	30	900	0.61	1884

## Annex 5

## Key financial coefficients of pilot enterprises in 2009

Indicators	Main activity profitability	Routine activity profitability	Current liquidity coefficient	Working capital of the enterprise	Actual debt coverage coefficient
<i>Unit</i>	%	%		<i>thousand UAH</i>	
Alchevsk TKE	2	3	1.03	1686	-
Vinnitsya MTE	10	10	1.06	3594	1
Voznesensk TS	-3	-4	1.32	226	-
I.-Frankivsk TKE	-8	0	0.90	-8918	5
KovelTeplo	5	2	0.97	-379	1
Komsomolsk TE	6	7	1.45	4864	1
Korosten TZ	-2	-3	1.12	1175	-
Kramatorsk MRTM	-8	-8	0.62	-12465	18
Kramatorsk TM	-4	-5	1.16	2232	0
Krasnoperekopsk CHNE	5	4	1.53	2932	-1
Kremenchuk TE	9	7	0.97	-392	2
LutskTeplo	-13	-11	0.90	-6261	9
Lviv ZTE	6	7	2.38	28941	-
Myrgorod TE	3	3	1.52	1585	-
Nikopol TE	-18	-20	0.70	-11169	1
N.-Volynsk TKE	-3	-3	1.78	1796	-
Pavlograd TE	-8	-14	0.46	-73514	-
Esco-Rivne	-8	5	2.21	884	-
Romny TS	5	5	4.53	1254	-
Romny KT	-2	2	2.08	1585	-
SevTS	-11	-24	0.84	-73	-
KrymTKE	0	3	0.91	-20573	-23
Kherson TE	6	-4	1.55	17586	2
Khmelnysky TKE	14	9	2.40	22154	-
Khmelnysky PZTM	2	3	0.63	-3273	1
Chervonograd TKE	-13	-13	1.68	8487	-14
Chernivtsi TKE	19	16	1.50	9236	5
Chernihiv OTKE	-9	15	0.47	-49571	0
ChuhuvTeplo	1	0	1.04	322	-

**Level of costs compensation and actual prime cost of 1 Gkal in 2009**

Indicators	Level of costs compensation in current tariffs:			Level of actual costs compensation with net accrued income	Actual prime cost of 1 Gkal
	population	budgetary facilities	other consumers		
<i>Unit</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>UAH</i>
Alchevsk TKE	70	148	165	97	280
Vinnytsya MTE	51	137	147	111	266
Voznesensk TS	33	130	130	100	387
I.-Frankivsk TKE	32	135	135	91	359
KovelTeplo	81	181	221	104	310
Komsomolsk TE	95	192	192	109	248
Korosten TZ	78	161	165	102	251
Kramatorsk MRTM	75	214	214	92	303
Kramatorsk TM	82	235	235	96	277
Krasnoperekopsk CHNE	81	190	190	105	347
Kremenchuk TE	88	188	188	107	251
LutskTeplo	72	168	168	89	296
Lviv ZTE	45	123	128	106	273
Myrgorod TE	93	198	198	103	277
Nikopol TE	78	149	220	85	329
N.-Volynsk TKE	66	155	157	97	274
Pavlograd TE	82	167	194	93	322
Esco-Rivne	58	99	99	93	316
Romny TS	87	183	199	108	220
Romny KT	67	146	176	98	299
SevTS	14	102	104	90	510
KrymTKE	79	162	162	81	297
Kherson TE	81	169	170	107	295
Khmelnysky TKE	60	215	188	116	230
Khmelnysky PZTM	58	208	182	104	238
Chervonograd TKE	79	172	185	84	299
Chernivtsi TKE	79	156	175	125	259
Chernihiv OTKE	64	190	204	93	275
ChuhuvTeplo	77	177	177	101	296

## Annex 7

**Level of fees collection, average terms of repayment of accounts payable and current liabilities of pilot enterprises in 2009**

<b>Indicators</b>	<b>Level of services fees collection</b>	<b>Level of services fees collection (population)</b>	<b>% of housing subsidies from NI</b>	<b>% of dotations for compensation of the difference in price from NI</b>	<b>Average term of accounts payable repayment</b>	<b>Average term of current liabilities repayment</b>
<i>Unit</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>%</i>	<i>months</i>	<i>months</i>
Alchevsk TKE	90	87	3	15	10	11
Vinnytsya MTE	90	86	2	16	4	6
Voznesensk TS	120	-	0	0	7	6
I.-Frankivsk TKE	90	91	3	0	6	8
KovelTeplo	97	96	3	0	2	5
Komsomolsk TE	95	93	1	12	4	3
Korosten TZ	93	92	3	0	3	3
Kramatorsk MRTM	89	89	7	0	8	13
Kramatorsk TM	82	84	5	0	10	10
Krasnoperekopsk CHNE	93	85	2	0	5	5
Kremenchuk TE	95	90	3	17	3	4
LutskTeplo	97	91	3	9	3	5
Lviv ZTE	96	95	2	0	4	3
Myrgorod TE	97	83	0	7	2	2
Nikopol TE	86	66	5	0	8	14
N.-Volynsk TKE	99	97	1	17	2	1
Pavlograd TE	80	70	0	3	12	30
Esco-Rivne	98	71	0	0	4	2
Romny TS	94	93	3	6	4	3
Romny KT	87	65	2	0	2	1
SevTS	105	110	0	47	1	3
KrymTKE	86	83	0	0	13	15
Kherson TE	98	84	1	17	8	5
Khmelnysky TKE	98	101	2	18	2	2
Khmelnysky PZTM	100	96	2	20	2	3
Chervonograd TKE	96	100	5	0	5	3
Chernivtsi TKE	81	92	1	0	3	3
Chernihiv OTKE	95	91	2	0	3	7
ChuhuiivTeplo	93	93	3	6	4	6

## Operational costs structure (heating) of pilot enterprises in 2009

Indicators	Material costs, total, incl.:	<i>fuel</i>	<i>electric power</i>	<i>purchased heat</i>	<i>purchased water</i>	<i>other material costs</i>	Labor payment costs	Social measures deductions	Depreciation	Other costs
<i>Unit</i>	%	%	%	%	%	%	%	%	%	%
Alchevsk TKE	67	44	15	0	4	4	15	6	7	5
Vinnytsya MTE	66	56	6	1	2	0	18	6	4	6
Voznesensk TS	70	62	7	0	1	0	15	6	4	4
I.-Frankivsk TKE	66	59	4	0	1	2	13	5	4	12
KovelTeplo	68	55	5	2	0	6	17	6	4	4
Komsomolsk TE	76	59	12	0	4	1	14	5	3	2
Korosten TZ	79	68	8	0	1	3	13	5	1	2
Kramatorsk MRTM	61	49	8	1	1	2	16	5	2	15
Kramatorsk TM	64	50	9	0	1	3	21	8	2	6
Krasnoperekopsk CHNE	71	15	1	51	0	3	13	5	3	8
Kremenchuk TE	74	58	4	10	0	2	14	5	2	4
LutskTeplo	74	38	6	23	0	7	14	5	1	6
Lviv ZTE	68	54	8	0	5	1	14	5	3	10
Myrgorod TE	63	53	8	0	0	3	23	8	3	2
Nikopol TE	70	57	10	0	1	2	19	7	1	3
N.-Volynsk TKE	70	62	8	0	0	0	15	5	8	2
Pavlograd TE	70	55	10	0	2	4	18	6	3	3
Esco-Rivne	57	46	4	0	0	7	22	8	1	11
Romny TS	54	38	8	0	0	8	24	9	7	6
Romny KT	70	61	7	0	0	2	14	5	3	8
SevTS	40	34	3	0	3	1	35	13	8	4
KrymTKE	68	53	9	0	3	3	20	7	2	3
Kherson TE	69	55	9	0	0	5	18	6	5	2
Khmelnysky TKE	81	72	2	0	1	6	13	4	2	0
Khmelnysky PZTM	70	62	6	0	0	2	14	5	2	9
Chervonograd TKE	73	61	7	0	2	3	13	5	3	6
Chernivtsi TKE	75	62	9	0	1	3	15	6	2	2
Chernihiv OTKE	72	60	8	2	0	0	15	5	3	5
ChuhuivTeplo	69	57	7	0	2	2	16	6	6	3

## Annex 9

## Level of wearing out and capital investments of pilot enterprises in 2009

Indicators	FA wearing out level	Capital investments volumes per subscriber	FA wearing out level per subscriber	Capital investments volumes per city resident	FA wearing out level per city resident
<i>Unit</i>	<i>%</i>	<i>UAH/subs./year</i>	<i>UAH/subs./year</i>	<i>UAH/person/year</i>	<i>UAH/person/year</i>
Alchevsk TKE	42	66	1019	20	311
Vinnitsya MTE	52	101	515	24	120
Voznesensk TS	4	360	179	3	2
I.-Frankivsk TKE	55	326	1320	58	234
KovelTeplo	35	337	637	68	129
Komsomolsk TE	77	35	2422	14	934
Korosten TZ	51	70	1121	17	276
Kramatorsk MRTM	42	190	533	16	44
Kramatorsk TM	26	58	591	3	28
Krasnoperekopsk CHNE	55	79	998	15	189
Kremenchuk TE	45	186	667	10	36
LutskTeplo	47	28	510	7	136
Lviv ZTE	34	-	-	11	24
Myrgorod TE	63	62	742	13	156
Nikopol TE	51	31	1104	4	134
N.-Volynsk TKE	40	173	897	28	148
Pavlograd TE	60	14	816	4	262
Esco-Rivne	37	-	-	0	10
Romny TS	50	56	2112	2	81
Romny KT	35	24	464	3	53
SevTS	49	150	3321	0	3
KrymTKE	58	37	883	-	-
Kherson TE	44	153	923	23	138
Khmelnysky TKE	43	53	616	11	131
Khmelnysky PZTM	50	57	520	4	35
Chervonograd TKE	50	114	1581	21	296
Chernivtsi TKE	44	58	663	9	105
Chernihiv OTKE	46	139	945	27	183
ChuhuivTeplo	46	14	1550	4	421

## Structure of accounts payable for goods, work and services in 2009

Indicators	fuel	purchased heat	water	electric power	renting (leasing) equipment	other
<i>Unit</i>	%	%	%	%	%	%
Alchevsk TKE	59	-	2	4	-	-
Vinnitsya MTE	83	-	-	-	-	-
Voznesensk TS	100	-	-	-	-	-
I.-Frankivsk TKE	-	-	-	-	-	-
KovelTeplo	76	3	-	3	15	-
Komsomolsk TE	97	-	3	-	-	-
Korosten TZ	83	-	-	-	-	-
Kramatorsk MRTM	62	5	-	20	-	-
Kramatorsk TM	85	6	-	2	-	6
Krasnoperekopsk CHNE	47	32	-	-	-	-
Kremenchuk TE	75	25	-	-	-	-
LutskTeplo	65	28	3	2	-	1
Lviv ZTE	93	-	-	-	-	-
Myrgorod TE	83	-	-	-	-	-
Nikopol TE	87	-	-	-	-	-
N.-Volynsk TKE	100	-	-	-	-	-
Pavlograd TE	64	-	4	8	-	-
Esco-Rivne	100	-	-	-	-	-
Romny TS	94	-	-	-	-	-
Romny KT	-	-	-	-	-	-
SevTS	91	8	-	-	-	-
KrymTKE	38	2	22	11	-	-
Kherson TE	85	-	-	-	-	-
Khmelnysky TKE	95	-	-	1	-	4
Khmelnysky PZTM	95	-	-	-	-	4
Chervonograd TKE	70	6	17	-	-	24
Chernivtsi TKE	59	-	8	26	-	-
Chernihiv OTKE	96	-	-	-	-	-
ChuhivTeplo	97	-	1	-	-	-

## Information about current tariffs on heating services of pilot enterprises (as on 01.07.2010)

City/enterprise	Single-rate tariff				Double-rate tariff					
	population		budgetary facilities	other consumers	population		budgetary facilities		other consumers	
					fee per unit of heating load connected	cost of thermal energy consumed unit	fee per unit of heating load connected	cost of thermal energy consumed unit	fee per unit of heating load connected	cost of thermal energy consumed unit
Unit	(UAH/Gkal)	(UAH/sq.m.)	UAH/Gkal	(UAH/Gkal)	(UAH/sq.m.)	(UAH/Gkal)	(UAH/sq.m.)	(UAH/Gkal)	(UAH/sq.m.)	(UAH/Gkal)
Alchevsk TKE	233.96	6.2	496.52	556.09	-	-	-	-	-	-
Vinnytsya MTE	-	-	-	-	1.48 season: 4.14	162.95	35828*	436.34	36788*	468.51
Voznesensk TS	-	-	-	-	2.60 season: 7.9	-	2.68	419.53	2.87	494.8
I.-Frankivsk TKE	-	-	579.98	579.98	1.7	season: 135.36	-	-	-	-
KovelTeplo	299.42	3.06/ 6.13	671.78	822.73	-	-	-	-	-	-
Komsomolsk TE	282.99	3.16	571.98	571.98	-	-	-	-	-	-
Korosten TZ	-	-	-	-	1.44 season: 3.77	136.22	1.29 season: 5.03	220.85	1.22 season: 4.52	221.6
Kramatorsk MRTM	-	-	-	-	1.44 season: 3.77	136.22	1.55 season: 8.61	359.28	1.49 season: 7.37	361.55
Kramatorsk TM	273	7.42	780	780	-	-	-	-	-	-
Krasnoperekopsk CHNE	-	-	-	-	1.48 season: 5.29	208.12	4.34 season: 12.04	437.81	4.34 season: 12.04	437.81
Kremenchuk TE	266.11	3.18	565.86	565.86	-	-	-	-	-	-
LutskTeplo	257.21	6.15	596.9	596.9	-	-	-	-	-	-
Lviv ZTE	-	-	-	-	1.53	148.76	2.02	402.01	2.12	418.16
Myrgorod TE	309.3	3.47	659.02	659.02	-	-	-	-	-	-

Note:

\* fee per unit of heating load connected is defined in UAH per Gkal/hour per month

**Annex 11**  
**(продовження)**

City/enterprise	Single-rate tariff				Double-rate tariff					
	population		budgetary facilities	other consumers	population		budgetary facilities		other consumers	
					fee per unit of heating load connected	cost of thermal energy consumed unit	fee per unit of heating load connected	cost of thermal energy consumed unit	fee per unit of heating load connected	cost of thermal energy consumed unit
<i>Unit</i>	<i>(UAH/Gkal)</i>	<i>(UAH/sq.m.)</i>	<i>UAH/Gkal)</i>	<i>(UAH/Gkal)</i>	<i>(UAH/sq.m.)</i>	<i>(UAH/Gkal)</i>	<i>(UAH/sq.m.)</i>	<i>(UAH/Gkal)</i>	<i>(UAH/sq.m.)</i>	<i>(UAH/Gkal)</i>
Nikopol TE	307	8.4	586.84	870.68	-	-	-	-	-	-
N.-Volynsk TKE	215.8	5.1	510.04	515.65	-	-	-	-	-	-
Pavlograd TE	Season: 315.12	7.86	645.44	750.44	-	-	-	-	-	-
Esco-Rivne	221.84	5.31	374.46	374.46						
Romny TS	228.5	4.65	483.5	524.84	-	-	-	-	-	-
Romny KT	241.93	4.63	523.48	632.15	-	-	-	-	-	-
Sevastopol SevTS	-	-	622.608	639.288	1.51 season: 2.37	93.791	-	-	-	-
Simpheropol (KrymTKE)	281.68	2.89	578.35	578.35	Calculated for other settlements					
Kherson TE	285.78	6.45	599.59	601.4	-	-	-	-	-	-
Khmelnysky TKE	165.1	4.16	593.92	519.67	-	-	-	-	-	-
Khmelnysky PZTM	165.1	3.12/1.04	593.92	519.67	-	-	-	-	-	-
Chervonograd TKE	282.91	8.18	617.2	664.38	-	-	-	-	-	-
Chernivtsi TKE	-	-	-	-	1.21 season: 3.46	143.91	2.19	285.59	2.34	285.59
Chernihiv OTKE	210	2.6	627.27	671.99	Calculated for other settlements					
ChuhuvTeplo	272.52	6.95	629.09	629.04	-	-	-	-	-	-

