



USAID
FROM THE AMERICAN PEOPLE

**MUNICIPAL HEATING
REFORM IN UKRAINE**

MUNICIPAL HEATING REFORM PROJECT (MHR)

Report on the Overview of the Tariff Setting Process and Tariff Methodology in the Sphere of Centralized District Heating in Ukraine

March 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 the Overview of the Tariff Setting Process and Tariff Methodology in the Sphere of Centralized District Heating in Ukraine

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

March 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.

CONTENT

INTRODUCTION.....	2
1. OVERVIEW OF THE TARIFF SETTING PROCESS IN THE SPHERE OF CENTRALIZED DISTRICT HEATING	3
2. TARIFF SETTING METHODOLOGY	7
3. SUMMARY	12

Introduction

This report provides an overview of the tariff setting process and description of the methodology of tariff calculation in the sphere of centralized district heating in Ukraine.

The description of the tariff setting methodology includes the summary of the provisions of the Decree of the Cabinet of Ministers of Ukraine “On approving Order for calculating of tariffs for production, transportation and supply of heat energy and centralized heating and hot water supply services”, 10.07.2006 p. №955, and includes an overview of such issues:

- general principles for setting tariffs (cost plus and price cap tariff setting approach);
- types of costs which can be recovered by tariffs;
 - costs of operating activity (including financing costs);
 - capital costs (planned profit)
- formula for calculating tariffs (and specifies customer groups);
- formula for indexing tariffs for inflation.

The report has been prepared by Alyona Babak, Municipal Development Institute, for the USAID Municipal Heating Reform Project in Ukraine.

1. Overview of the Tariff Setting Process in the Sphere of Centralized District Heating

1.1 Regulatory process

Since Ukraine's independence (1991), the regulatory authorities in DH sector have been mostly delegated by the state to the level of oblast state administrations (or republican level) and to the level of local self government. Regulation of DH companies' operations in Ukraine is specified in numerous legislative and regulatory documents.

In Ukraine tariff setting is regulated by the provisions of a number of laws and other normative acts, among which the ones that specify key guiding principles and rules are the following:

- Law of Ukraine "On Local Self Governments in Ukraine", of 21.05.1997 № 280/97-BP.
- Law of Ukraine "On housing and communal services", 24.06.2004 p. №1875-IV.
- Law of Ukraine "On heat supply", 02.06.2005 p. №2633-IV.
- Law of Ukraine "On prices and price setting", 03.12.1990 p. №507-XII.
- Law of Ukraine "On natural monopolies", 20.04.2000 p. №1682-III.
- Law of Ukraine "On basis of regulatory policy in the sphere of economic activity" # 1160-IV of 11.09.2003
- Law of Ukraine "On Enterprise Profit Tax"
- Decree of the Cabinet of Ministers of Ukraine "On approving Order for calculating of tariffs for production, transportation and supply of heat energy and centralized heating and hot water supply services", 10.07.2006 p. №955. (further CoMD №955, or Price setting order).
- Order of the State Committee of Construction of Ukraine "On approving Rules for calculating two-tier tariffs for heat energy and hot water", 08.09.2000 p. №191. (further – Rules №191).
- Decree of the National Commission of regulating electric energy in Ukraine "On approving Order for calculating tariffs for electric and heat energy that is produces at cogeneration facilities", 12.12.2005 p. №897. (further – Order №897).
- Decree of the Cabinet of Ministers of Ukraine "On approving Rules for providing services o centralized heating, hot water supply, supply of cold water and wastewater removal" 21.07.2005 p. №630. (further - Rules for providing services).
- Decree of the Cabinet of Ministers of Ukraine "On Rules for Using Heat Energy" 3.10.2007 № 1198 (further – Rules for using heat)
- Order of the Ministry of economy of Ukraine "On Approving Order on providing Conclusions regarding Economically Justified Planned Costs for the Centralized Water and Wastewater services, Production, transportation and Supply of heat Energy and Heating and centralized hot water supply Services, Waste Utilization and technical Maintenance of Lifts" # 67 of 07.03.2007.

Pursuant to legislation, a set of the regulatory measures and the distribution of regulatory responsibilities among the state and local self governments are the following:

Table 1 - Distribution of responsibilities relating to the regulation of DH sector

Administrative units/ Regulatory function	Ministry of Housing and Communal economy	Ministry of Economy (State Price control Inspection)	Oblast State Administration/CMoARC	Local self governments
Licensing of activity related to heat production, transportation and distribution;	x		x	
Tariff setting		x		x
Setting of hot water consumption norms for un-metered consumption of residential customers ¹				x

With respect to tariff setting, in Ukraine, following the transfer of assets, in 1997, the Cabinet of Ministers has delegated the powers to set tariffs for communal services (including for heat supply and heating and hot water services) to the Crimean Council of Ministers, the oblast state administrations, and the Kyiv and Sevastopol city state administrations.² The transfer of responsibility for tariff setting from the state to the local (oblast administrations and local self governments) governments envisaged termination of subsidies from the state to the DH companies to cover the difference between approved tariffs and actual cost of service provision. Those subsidies were paid to the suppliers from the state budget in order to reduce tariffs for residential customers.³ No money has been budgeted by the state for compensation of losses of water operators since the second half of 1998. In 2006 the state renewed the subventions to the local governments in order to compensate the losses of utilities that occurred due to the non cost recovering tariffs.

Currently, the regulatory powers are divided among the national and local governments (oblast state administrations and local self governments) in the following way:

- **The Cabinet of Ministers of Ukraine** sets rules for tariff setting (general requirements related to identification of costs that can be recovered through tariffs)⁴. These requirements are spelled out in the Decree (e/g/ for heating – Cabinet of Ministers Decree #955) and passed to the local level as a mandatory regulatory framework for tariff setting. The **State Inspection for Price Control** reviews tariff calculations prior to tariff approval.

¹ This means that the regulator approves the volume of hot water to be billed by the service provider per customer without a meter per month.

² CM Decree # 1168 dated October 28, 1997, “On Improvement of the State Tariff Regulation System for Housing and Communal Services”.

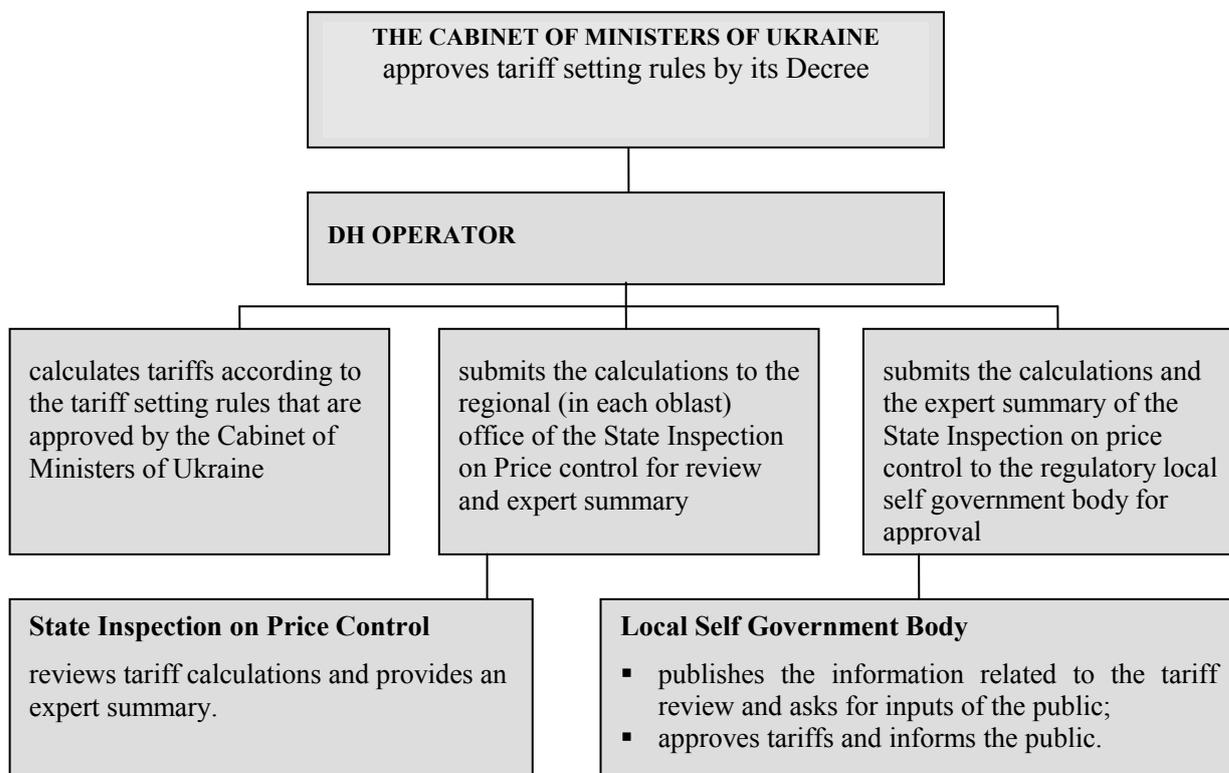
³ Supreme Rada Law # 776-XIV dated June 29, 1999, “On the State Budget of Ukraine for 1999” did not envisage any subsidies to communal utilities to cover the losses resulting from the difference in actual and approved tariffs for residential customers.

⁴Article 31, the Law of Ukraine “On Housing and Communal Services”, No. 1874-IV of 24.06.2004.

- **Local self-governments bodies** set tariffs for the services of the water operators of any form of ownership on their territories⁵.

Tariff setting process is carried out in several stages as defined in the diagram 1.

Diagram – 1. Tariff Setting Procedure



As viewed from the Diagram 1, the tariff setting and approval process is quite complicated and requires utilities to follow regulatory procedures that are defined by the law of Ukraine “On basis of regulatory policy in the sphere of economic activity” # 1160-IV of 11.09.2003 and the provisions of the CoMD #955.

The tariff setting process is the following:

1. Utility calculates tariffs according to the **CoMD #955**
2. Utility submits the calculations for review of the State inspection for price control or its territorial bodies according to the order that is defined by the Ministry of economy (CoMD #955, article 95)
3. The state inspection reviews the calculations according to the **Order of the Ministry of economy of Ukraine “On Approving Order on providing Conclusions regarding Economically Justified Planned Costs for the Centralized Water and Wastewater services, Production, transportation and Supply of heat Energy and Heating and centralized hot water supply Services, Waste Utilization and technical Maintenance of Lifts” # 67 of 07.03.2007**. According to this order the State Inspection should provide a written conclusion regarding tariffs within 10 working days.
4. After obtaining a position conclusion of the state inspection the utility submits calculations to the City executive committee addressed to the mayor.

⁵ Article 14, the Law of Ukraine “On Housing and Communal Services“, No. 1874-IV of 24.06.2004

5. The city, as a regulatory body for municipally owned utilities, has to follow the regulatory procedure for tariff review and approval.

The regulatory procedure, as defined by Article 9 of the Law of Ukraine “*On basis of regulatory policy in the sphere of economic activity*” # 1160-IV of 11.09.2003 has the following stipulations:

- draft of the regulatory act (*read the decision of the regulatory body on tariffs*) with a respective analyses of the regulatory impact is made public no later than in 5 days after the announcement regarding this regulatory act was published
- the term for obtaining comments from natural and legal persons can not be less than 1 month and no longer than 3 months from the date of making the draft of the regulatory act public.
- after the draft of the regulatory act on tariff approval is discussed publicly for at least 1 month, the regulatory body reviews all the comments and propositions and approves tariffs’ change. The decision about tariff change is then published in the local press of the respective councils no later than in 10 days after decision on the tariff approval (article 12).

1. 2. Tariff setting principles

Tariff setting principles are defined in article 30 of the *Law of Ukraine “On housing and communal services”* and are the following:

- affordability of housing and communal services for all customers and equality of legislative guarantees;
- normative regulation of the service provision to the customers at prices that are approved in the order that is determined by law;
- equality of the services tariff level and the level of economically justified costs for their production;
- openness, access and transparency of the tariff structure for customers and the society.

The principles that are defined by the Law “*On housing and communal services*” are not clear and unambiguous, so one can only interpret what is meant by the stipulated provision of the law.

By “equality of legislative guarantees” one could understand that all customers should be equally protected by law, by “by normative regulation of service provision” one could understand that the state defines norms for providing services and stipulates them in respective legal documents, by “equality of tariff levels and costs” the legislation means that tariffs should be cost recovering if the costs are economically justifiable.

The price setting principles also define that price setting order is determined by legislation as well as the process of providing services. Full economically justifiable cost recovery principle constitutes the basis for regulation. However, actually this principle is not realized because the current CoMD #955 restricts some of justifiable costs from being covered by tariffs since such costs are not allowed to be deducted for profit tax calculation purposes by the Law of Ukraine “On Enterprise Profit Tax”⁶.

⁶ The list comprises the following cost items: Penalties and sanction, Financing of tax payers associations management bodies, Parking costs, operating lease of cars, Depreciation of non production fixed assets and the

There are several very important provisions in Article 31 of *the Law of Ukraine “On housing and Communal services”*, which are listed below:

- “4. In case tariffs for housing and communal services are approved at the level that is lower than economically justified costs for their production the body, which approved them should compensate to the producer/provider of service from a respective budget the difference between an approved level of tariff and economically justified costs for their production.
5. The respective city, village or settlement council envisages in its budget expenditures for compensating utilities the costs, which are related to approving tariffs for housing and communal services lower than the level of economically justified costs.
6. Approving tariffs for housing and communal services lower than the level of economically justified costs without respective compensation is prohibited and can be appealed in court.
7. Central executive bodies are responsible for consequences of approving or regulating tariffs which are changed by them according to the authority.
8. In case that tariffs are changed by the central executive body, which caused unexpected costs to the producers/service providers, central executive bodies should compensate losses in full, if they are caused by such change during financial year and prior to approving a new budget.”

The same Article 31 of the Law of Ukraine “On Housing and Communal Services” specifies that the utility can appeal the decisions of the local governments by following general rules for solving argument in court, specifically: “Arguments in regard to forming and approving tariffs for housing and communal services and compensation of losses to the utilities, which are related to approving tariffs for housing and communal services lower than the level of economically justified costs for their production, are solved in a court.”

2. Tariff Setting Methodology

Tariff setting methodology is defined by the Decree of the Cabinet of Ministers of Ukraine “On approving Order for calculating of tariffs for production, transportation and supply of heat energy and centralized heating and hot water supply services”, 10.07.2006 p. №955 (further CoMD №955 or Price setting order).

The Price setting order sets requirements for setting of tariffs for:

- production of heat energy (HE);
- transportation of HE;
- supply of HE;

ones that are transferred for free This cost may cause the major difference between accounting depreciation cost and tax depreciation cost ,life insurance and health insurance that is not mandated by la, Maintenance of social infrastructure objects (that are on the balance sheet after 1997., material assistance that is not tax exempt, charitable contribution to other enterprise, hospitality cost, advertising costs (up to 2% of taxable profit for the previous year, expenses for non mandatory insurance in amount that is no more than 5% of tax deductible costs for previous tax period , 50% of gasoline costs for cars of administrative staff, Professional training and retraining of staff in the amount of costs that are defined by the Cabinet of Ministers of Ukraine (no more than 3% of labor costs fund of the reporting period.

- DH services; and
- HTW supply services.

CoMD #955 sets the following rules for tariff calculation:

- general principles for setting tariffs (cost plus and price cap tariff setting approach);
- types of costs which can be recovered by tariffs;
 - costs of operating activity (including financing costs);
 - capital costs (planned profit)
- formula for calculating tariffs (and specifies customer groups);
- formula for indexing tariffs for inflation.

2.1 Cost plus & Price Cap

Price setting methodology is based mostly on “cost plus” approach. However, in Ukraine, the totals allowable for recovery costs (including depreciation, taxes) are used as the base for calculation of profit. The formula for calculating revenue requirements is the following:

$$RR_{i,t} = (AC_{i,t}) * (1 + ROR_i)_t$$

where:

RR_i - revenue requirement in the planning period;

AC_i - allowable for recovery costs (including depreciation and taxes);

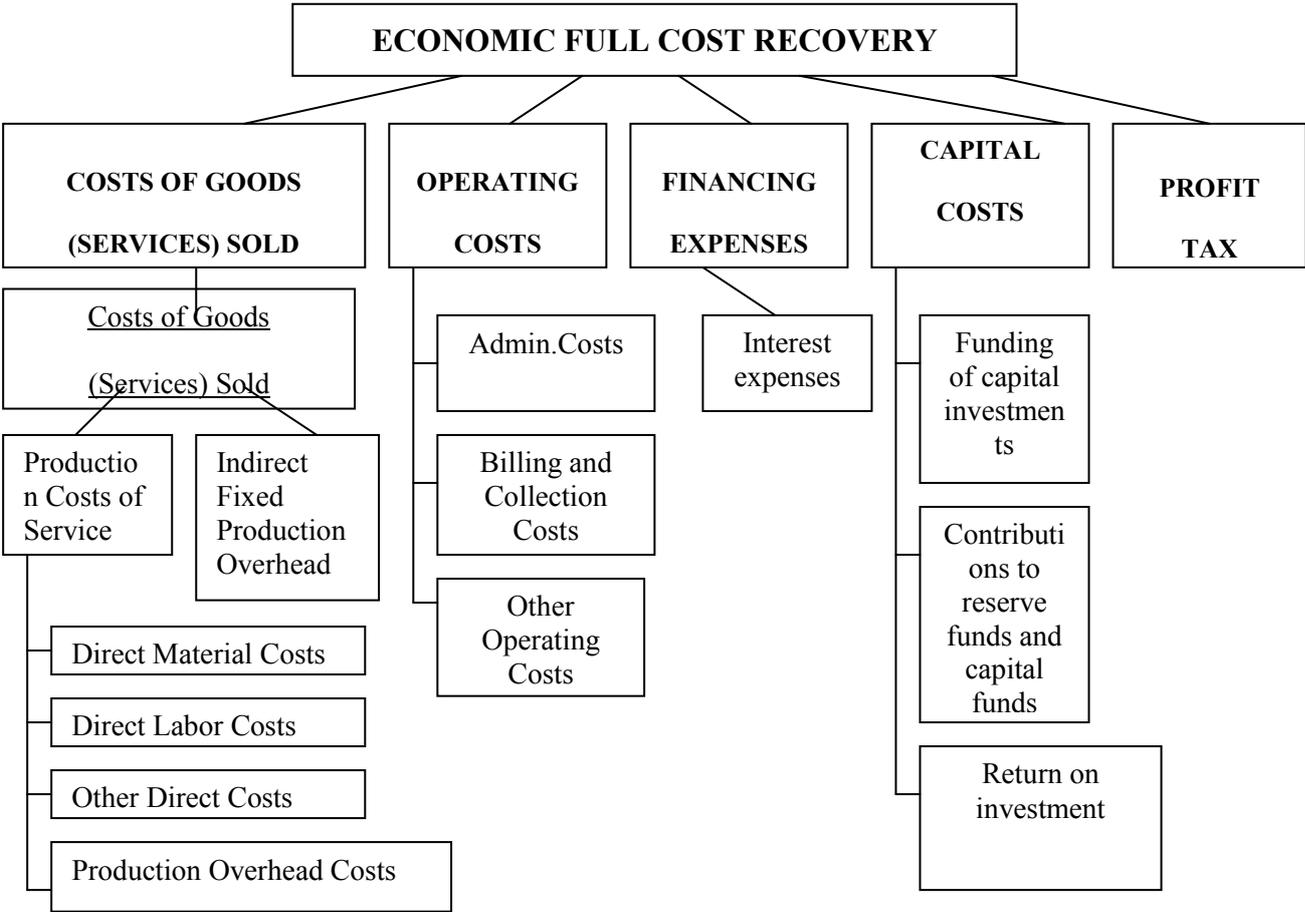
ROR_i - rate of return.

The price setting order also allows setting of price caps. However, the CoMD #955 does not define the formula for setting price caps. It only specifies that price caps can be set by the regulatory bodies if the utility plans implementing resource saving measures. During this period the tariffs can be fixed and the profit resulting from these measures has to be reinvested into resource saving measures, renewal of assets and material stimulation of the employees. The prerequisites for implanting price cap are the availability of the auditor’s statement and approved program for DH system development.

2.2 Allowable Costs

The Price setting order tries to achieve the objective of full cost recovery. In the Ukrainian context the meaning of full cost recovery in the first place is the recovery of all economic costs incurred in the recovery period. They include expenditures of utility’s operating activity (costs of goods (services) sold and operating costs); financing expenses, resulting from enterprise’s financing activities; and costs associated with utility’s investing activities (in the amount of capital funding required through annual revenues in excess of depreciation). Full economic costs are identified in Figure 1.

Figure 1. Economic full cost recovery.



The Law of Ukraine “On Natural Monopolies” requires utilities to separate accounts for monopolistic and non monopolistic types of activity. Most of the utilities are trying to follow this requirement at the stage of tariff calculation. In the books, however, very few of them keep separate sub accounts for expenditures or financial results’ accounts.

2.3 Costs of Operating Activity

Expenditures of operating activity include: **the costs of services sold and operating expenses**. Cost of services sold is the value of materials, labor and other resources consumed directly in production of the services sold during a recovery period plus production overhead expenses. Operating expenses are the cost of resources that are consumed as part of administrative and selling (collection and billing) activities.

Most of the costs of the utility’s operating activity can be recovered through tariffs and most of them should be calculated on a normative basis, this specifically relates to the cost of major cost items, such as labour, material resources - energy (gas, electric energy other), water, chemicals etc. *Depreciation is an allowable for recovery through tariffs expense.*

The need in material resources is estimated based on the projected volumes of heat production and sale. *The planning of sales should be based on normative indicators (connected capacity, outside temperature, number of days of the heating season etc.) and do not account for any actual demand patterns.*

The utilities are allowed *to recover only those expenditures, which are allowed to be treated as expenses for calculation of corporate profit tax purposes*. Current tax legislation changes practically every year introducing various restrictions for treating costs. Not all operating costs are allowed to be treated as expenditures for corporate profit tax calculation. E.g. only 50 percent of actual expenses for gasoline that is used by cars of administrative personnel can be deducted for tax purposes; costs of parking are also not allowed to be deducted. Calculation of depreciation should follow tax law calculation method as well, which significantly different from the accounting approach.

The current tariff setting methodology does not allow utilities to recover bad debts through tariffs, as well as costs related to maintenance of social infrastructure⁷ (if any), contributions to trade unions, amounts of penalties or financial sanctions, cost related to damage of assets, losses related to purchase and sales of currency, losses of operating currency difference, sponsoring and charitable contributions, costs of sales of production inventory.

Currently, in Ukraine heat utilities have to pay 10 mandatory taxes and fees, which is the highest number of taxes being paid by a communal utility either to the state or local budgets. The taxes and fees include:

- Communal tax ;
- Land tax;
- Payment for use of radio frequency;
- Tax from the owners of transportation vehicles;
- Income tax;
- VAT (charged on heat supply services at 20 per cent).
- Payment for special use of water resources;
- Fee for environmental pollution;

Under current regulation the utilities can include interest expenses resulting from their financing activities into tariff calculations. The Price setting order defines that these are expenses for payment of loans that are received and expenses that are related to borrowing for investment purposes of the main activity.

2.4 Capital costs

The tariffs can recover capital cost in the amount of an allowable profit. The price setting order allows utilities to recover 12% of profit (including profit tax) that is estimated as percent of all costs of operating activity. In addition, the price setting order recognizes allowable profit or return for not-publicly owned utilities. All utilities should plan profit based on an approved capital investment programme or available business plan.

It is also allowed to include costs of setting a capital reserve, which needs to be accumulated for capital investment purposes. The amount of capital costs is limited based on financing needs for renovation and expansion of fixed asses and other non material assets that can be depreciated.

The Price setting order also defines some additional restriction regarding capital costs. Capital investment costs, cost related to the establishment of special investment funds, and return on

⁷ Social infrastructure comprises e.g. summer camps for children, recreation facilities, saunas, swimming pools, stadiums, kindergardens etc.

invested capital can be included into tariff calculation for a period of no less than 5 years⁸. When applying for a new tariff the utility should identify what investments will be financed from depreciation and profit.

The program for developing heat supply, heating and hot water supply systems may include implementation of measures that are leading to improving technologies, reconstruction of infrastructure, automation and dispatching, resource saving, increasing ecological safety and reliability of e systems and the required financing (with specifying the amount which is to be financed from a planned profit). By this formulation in the price setting order the regulators mean that the utility has to envisage at the stage of planning tariffs which sources of financing will be used for financing capital investments – either the utility has to plan profit or capital investments can be carried out at expense of funds obtained through budgeted depreciation.

Based on the above provisions of the price setting order, we assume that it allows a company to finance investments at the expense of operating activity (within the limits of depreciation), profit, loans and the shareholder's own capital.

At the same time, the price setting order envisages *no return of the invested capital* (loans and owned capital), except for potential possibility of its return at the expense of depreciation (which can not be realized by the private operators which according to the laws have to reinvest funds in the amount of depreciation into the municipal infrastructure). *Return on investment* can be recovered from profit within the limit of 12% of the total costs.

It is required to attach technical and economic estimates or business plans to the specified programme, by which it is possible to prove the effectiveness of the planned investments, sources of investment resources and the term of project implementation.

The price setting order does not specify the method for allocating capital costs among customer groups. It only sets limits for allowable profit recovery for each class of customers. For budgetary customers it should not be more than 15% of the costs of operating activity, and for other customers it should not exceed 50% of total allowable for recovery costs.

2.5 Tariff calculation & Types of Tariffs

Price setting order defines that tariff is calculated per Gcal of heat energy sold to the customer:

- If customers are billed based on the metered consumption, the utility applies for billings tariffs that are approved per Gcal consumed.
- The utility applies tariffs in Gcal/m² (Gcal/m³) to customers, who are charged for normative consumption (it is derived from the cost of Gcal for a respective customer group by multiplying it by the norm of heat consumption per 1 m² of heating area (or 1 m³ of heated volume).

According to the price setting order economically justified tariff is a sum of planned total costs (TC) and planned profit (P). Allowable return, however (as described above), is estimated as a percent of costs of operating activity.

Price for heat is determined as a result of dividing total planned costs by projected consumption. Consumption is estimated based on a number of indicators that are predetermined by normatives – e.g. connected capacity of the customers set in technical

⁸WE ASSUME THAT THE ORDER TALKS ABOUT CAPITAL COSTS, but it is not for sure and not really clear)

documentation; normative outside temperature for the heating season in a particular region; normative length of heating season and does not relate to actual changes in demand patterns. Capacity of the boiler plants and transportation systems should meet predetermined demand requirements, and overall DH system has to be operating with the normative losses which are set by regulations (up to 15% depending on the length of the networks).

Tariffs should be approved for three customer groups – residential customers, budgetary organizations and other customers. Each category has to be defined based on the economically justified cost allocation, related to the provision of services. The regulatory bodies can define more customer categories. Religious organizations have a special treatment and have to be charged as residents. The tariff, which is set by the regulatory body, should contain VAT (20%).

The difference in tariff level for customer groups is mostly driven by the difference in price for natural gas that is purchased by the DH utility for heat supply to different customer groups, e.g. as of March, 2010 Lviv DH utility purchases gas at the following natural gas prices, VAT included:

- for households – 872.784 UAH/thousand m³;
- for budget-funded consumers – 2 619.192 UAH/ thousand m³;
- for other consumers – 2 619. 192 UAH/ thousand m³.

The Price setting order forces the utilities to calculate two-tier tariffs. In Ukraine, there is no experience of setting two-tier tariffs for hot water. However, many cities have already introduced two-tier tariffs for heating services: e.g. Lviv, Ternopil, Ivano-Frankivsk, Bila Tserkva, Izum, Kharkiv, Pryluky, Nizhin, Boryspil, Vinnytsa, Chenivtsy, Odessa, Cherkasy, Kovel, Korosten, Berdyansk, Lozova, Uman and many other.

2.6 Indexation of tariffs

Future price increases can be considered by tariff setting in the form of tariff indexation. The Price setting order (as amended) allows tariff indexation.

In case of change of tax rates, minimal wage, prices and tariffs for fuel and energy resources (natural gas, electricity, water) the tariffs can be indexed. However, the indexing assumes only change of the cost items which have been changed. Profit is not indexed.

The tariff structure of the heat tariff indicates that the share of the energy resources expenses (natural gas, electricity, and purchased heat energy) could make up to 70%. E.g. for the DH utility of the city Kharkiv the tariff structure in 2008 included:

- Natural gas costs – 40%;
- Purchased heat energy costs which are dependent on the gas prices – 25%;
- Electricity – 5%.

3. Summary

Current tariff setting mythology has the following drawbacks that do not allow utilities in achieving cost recovery and do not motivate rational use of energy resources both by the suppliers and consumers:

- Planning of sales based on normative indicators sets disincentives for the suppliers of heat to bill the customer for lower consumption. Should the actual consumption be lower than the planned one, the producer of heat will not reach its sales target and will not recover the actual production costs. This problem is equally applicable for the utilities under a two-tier price setting system (for the variable part of the tariff).
- Since changes in the demand side are not reflected in price setting, the utilities have to maintain oversized production capacities. Under condition that actual demand is lower than the planned one (e.g. due to higher temperature during the heating season than envisaged by the normative), the producer has to bill customer for lower consumption based on the tariff that was originally calculated for larger sales. However, if the boiler plant is inefficient (due to oversized capacity) the cost of producing heat does not vary significantly with lower consumption.
- Tariff calculation methodology does not envisage recovery of losses of prior periods, which result from regulatory lags. Regular loss making operations force utilities to underfinance investments.
- Tariff setting rules (on setting price caps) do not allow capitalization of savings by the operator who implements an energy performance contract. Under current system of tariff setting, the operator has to either reinvest the profit into infrastructure or repay it as a bonus to the employees.
- Indexing formula does not allow indexing of the whole tariff by a defined index; it only allows indexing of certain costs items.

Currently, the methodology does not allow establishing of the market mechanisms for implementation of long-term PPP contracts, because:

- 1) the private operator has no business interest in decreasing expenditures, as all planned expenditures in its operation and the profit, defined as a percentage of the costs, should be obligatory refunded in the established tariffs;
- 2) with *price cap tariffs* established, the investor has no possibility to use the funds acquired due to the efficient management for the return of investments and for the payment of dividends, and is supposed to fully reinvest them into the infrastructure. Any funds saved above the plan should be used exclusively for the renewal of the lease or conceded facilities or on material encouragement of the staff;
- 3) There is no source defined for the return of the invested capital (loans and owned capital). The *return* on the invested capital should be received as part of profit, while the *invested capital can only be returned* at the expense of depreciation. This mechanism for the return of the invested capital conflicts with the provisions of Paragraph 3 of Article 20 of the Concession Law, which requires from the concessionaire to reinvests funds in the amount of depreciation expense into the object of concession.

In this report we do not summarize the problems related to the tariff regulation, since they were covered in other reports on the MHR project.