



# **PUBLIC PRIVATE PARTNERSHIPS AND TARIFF REGULATION IN THE WATER, WASTEWATER, AND DISTRICT HEATING SECTORS**

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# CONTENTS

<b>1. INTRODUCTION.....</b>	<b>1</b>
<b>2. WHY IS A REGULATOR NEEDED?.....</b>	<b>2</b>
<b>3. PRESENT ARRANGEMENTS FOR THE REGULATION OF MUNICIPAL UTILITY SERVICE TARIFFS.....</b>	<b>3</b>
3.1 Overall framework .....	3
3.1.1 <i>The laws and decrees that govern regulation in these sectors</i> .....	3
3.1.2 <i>The new regulatory commission</i> .....	5
3.2 Tariff-setting methodology and procedures .....	7
3.2.1 <i>Present rules</i> .....	7
3.2.2 <i>Planned and proposed changes</i> .....	10
3.3 Tariff reviews by the new commission .....	11
<b>4. PRINCIPAL ISSUES AFFECTING REGULATORY RISK.....</b>	<b>11</b>
4.1 Methodology .....	11
4.2 Inconsistency between the terms of PPP contracts and regulation .....	12
4.3 PPPs for potable bulk water supply and wastewater treatment.....	13
<b>5. OPINIONS OF PRIVATE SECTOR COMPANIES.....</b>	<b>14</b>
<b>6. WAYS THAT UKRAINE COULD REDUCE REGULATORY RISK AND ENCOURAGE MORE PRIVATE SECTOR INVOLVEMENT IN THE SECTORS.....</b>	<b>17</b>
6.1 RAB-based methodology .....	18
6.2 More flexibility regarding depreciation .....	19
6.3 Scheduled multi-year control periods, with automatic inflation adjustments.....	20
6.4 More flexible use of norms in setting tariffs .....	20
6.5 Clearer separation between the question of revenue requirement and the question of affordability .....	21
6.6 Dealing with the workload in regulating municipal-level companies .....	22
6.7 Other issues associated with regulation of the sectors .....	22
<b>7. CONCLUSIONS .....</b>	<b>23</b>
<b>ANNEX 1. SUMMARY OF THE KEY LEGISLATIVE PROVISIONS REGARDING TARIFF-SETTING .....</b>	<b>25</b>

## ABBREVIATIONS

Abbreviations are defined in the main text.

The term “Commission” refers to the National Communal Services Regulatory Commission, which started operation in July 2011.

The National Energy Regulatory Commission is referred to by the acronym “NERC”.

“CoMD” means Council of Ministers Decree.

## 1. INTRODUCTION

The Ukrainian Public-Private Partnership Development Program (P3DP), implemented by FHI Development 360 LLC (FHI 360) and funded by the United States Agency for International Development (USAID), focuses on public private partnership (PPP) development in Ukraine by providing assistance at national and municipal government levels to create a positive PPP environment and support the preparation of sound PPP projects.

Beginning operations in October 2010, with scheduled activities through September 2015, P3DP has four main programmatic objectives:

- Objective 1 – Legal Framework Enhancement
- Objective 2 – PPP Unit(s) Establishment
- Objective 3 – Awareness and Capacity-Development
- Objective 4 – Pilot Project Transactions

Selecting pilot projects for development is based on the characteristics of the particular project and municipality, but it also depends heavily on the sector and type of PPP. Since the beginning of P3DP activities, the question of whether projects in the water, wastewater, and district heating sectors in Ukraine would be good candidates for pilot projects has been debated. These sectors (referred to sometimes in this paper as the “regulated sectors”) are certainly important for the development of badly needed municipal infrastructure in Ukraine. There is therefore no question that, in principle, they would be eligible – and in fact priority – sectors for PPPs.

The difficulty arises because tariffs paid by customers in these sectors are *regulated* in an on-going manner that involves a certain degree of discretion. A private company that operates in any of these services is dependent for its revenue on the periodic decisions of a regulatory body of some kind – either a national regulator or a municipality. It becomes crucial to assess *regulatory risk* and determine the degree to which it does, or does not, constitute an obstacle to PPPs in these sectors. If regulatory risk is too high, either private sector companies will add too high a risk premium to their price – to act as a cushion against adverse regulatory decisions – or high-quality companies will simply not want to become involved.

It was therefore decided to prepare a short paper to examine the question of regulatory risk and assess whether pilot PPP projects should be undertaken in these sectors. In addition to being important for P3DP’s activities, the paper should be of interest to anyone who is concerned with PPPs in the water, wastewater, and district heating sectors in Ukraine.

After discussing why regulation of some kind is needed in these sectors, the paper looks at how regulation of these sectors works in Ukraine. It then goes on to describe briefly the opinions of some of the private companies working in the regulated sectors. Based on this assessment, several suggestions are made about how the system could be improved. Finally, conclusions are drawn as to whether pilot PPP projects should be undertaken (and supported by P3DP) in the regulated sectors under present conditions.

## 2. WHY IS A REGULATOR NEEDED?

Most PPP arrangements do not require a defined regulatory body. They operate very much in the *regulation-by-contract* mode. For example, it would be highly unusual to propose a regulator to oversee relations for a build-operate-transfer (BOT) contract for a wastewater treatment plant. The reason is that the needed tariff adjustments over the life of the contract are limited in scope and can be expressed well in precise terms in the contract itself – some of the terms being almost mechanical in application. Disputes, even about the formulas for remuneration, can be handled well by conventional expert determination, courts, or arbitral tribunals.

Even in the case of a contract for an entire utility system (e.g. starting from production of water to distribution and finally sales to retail customers), a conventional utility regulator may not be needed. As one World Bank publication that has examined the problem of allocating regulatory functions to different organizations has stated:

Government need not create a “regulator” to carry out all regulatory functions. Governments should consider which organizations are best suited to perform the regulatory functions. A well-functioning ministry, for example, may be a better choice for monitoring provider performance than a new and untested agency.<sup>1</sup>

The question of whether a conventional regulator is needed in the context of a long-term PPP contract depends, first of all, on the degree to which needed adjustments to the tariff (or service fee) can be expressed in well-defined, precise terms. To the extent they can, the contract can contain the substantive and procedural rules for the adjustments, and what is needed instead of a regulator are sound and effective *dispute prevention and resolution* procedures and mechanisms.

The regulation-by-contract mode – typical for PPPs – can work well so long as the contract can be designed in a way that is sufficiently *complete*. The main difficulty in the water sector or district heating sector comes about where there is a PPP contract that encompasses an *entire utility system*. Most experts have come to the view that a broader, more discretionary tariff review will be needed at periodic intervals (say, every five years), and that an ordinary court or arbitral tribunal is not well suited to carry this out or to adjudicate broad (and messy) disputes relating to it. Some PPP arrangements simply put their faith in open-textured bilateral negotiations for this kind of review. Others use expert panels. But in many countries, the use of a conventional utility regulator has been adopted as the required approach. Ukraine, too, has chosen this path.

In the classic *regulation-by-commission* mode, a specially constituted public body, a *utility regulator*, regulates the utility company using broad principles in the enabling legislation (or in the U.S., case law) and more specific rules contained in secondary legislation or a company-specific *license* (or equivalent), or embedded in strong custom. There may not even be a “PPP contract” containing extensive regulatory rules between the regulated company and a public authority.<sup>2</sup>

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<sup>1</sup> Eric Groom, Jonathan Halpern, and David Ehrhardt, *Explanatory Notes on Key Topics in the Regulation of Water and Sanitation Services* (World Bank, June 2006), p. 20.

<sup>2</sup> There might be a minimal PPP contract that explicitly provides that important regulatory determinations (e.g. tariff-setting) are the responsibility of the regulator, without constraining the regulator’s decisions in any way.

This is the mode of conventional utility regulation used in the U.S. and U.K. and which has had a large influence on many other countries in the past 25 years. Although according to evolving good practice, it is considered best for the regulator to bind itself for certain periods of time to more precise rules it has laid down, the regulator in this mode (a full-fledged regulator) exercises considerable *discretion* in its decisions – this is inevitable. The regulator is often characterized as having a broad responsibility to “balance” the competing interests of consumers and companies and other stakeholders. This is where regulatory risk becomes especially apparent.

Ukraine has chosen this basic mode of regulation for the water, wastewater, and district heating sectors. The next section of the paper describes the Ukrainian system for regulating tariffs in the water, wastewater, and district heating sections.

### **3. PRESENT ARRANGEMENTS FOR THE REGULATION OF MUNICIPAL UTILITY SERVICE TARIFFS**

#### **3.1 Overall framework**

##### **3.1.1 The laws and decrees that govern regulation in these sectors**

The system of tariff-setting laws and regulations in Ukraine includes *laws* of Ukraine, *decrees* of the Cabinet of Ministers of Ukraine, *resolutions* of the national regulatory commissions, and various *decrees* of the central executive bodies (e.g. ministries).

The *laws* of Ukraine (i.e. primary legislation) describe principles of price setting, acknowledge free and regulated prices, set rules for the recovery of costs (operating, depreciation, capital) and profit by natural monopolies and related entities that operate adjacent to natural monopoly markets, and define responsibilities of state bodies and local self-governments in the area of price setting.

Primary legislation includes the laws “On Natural Monopolies”,<sup>3</sup> “On Prices and Price Setting”,<sup>4</sup> “On Housing and Communal Services”,<sup>5</sup> “On Heat Supply”,<sup>6</sup> “On Water and Drinking Water Supply”.<sup>7</sup> Key provisions of the main laws are summarized in **Annex 1**, which provides an overview of the existing legal background for tariff-setting.

The Law “On Natural Monopolies” makes reference to the Tax Code of Ukraine and states that for regulatory purposes tariffs can only recover costs that are deductible for calculating enterprise profit tax. Thus, in addition to the specific laws, the Tax Code is part of the framework for tariff-setting of utilities.

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Even though a bilateral contract is involved (rather than an administrative license), this should still be considered to be an example of the *regulation-by-commission* approach.

<sup>3</sup> № 1682-III of April 20, 2000.

<sup>4</sup> № 507-XII of December 3, 1990.

<sup>5</sup> № 1875- IV of June 24, 2004.

<sup>6</sup> № 2633-IV of June 2, 2005.

<sup>7</sup> № 2918-III January 10, 2002.

A major instrument that defines tariff-setting powers of executive bodies is the Law of July 2010 “On the National Commission of Communal Services Market Regulation of Ukraine”.<sup>8</sup> (In July 2011, the title of the Law was changed to “On State Regulation in the Sphere of Communal Services Market” and the name of the commission was changed, but the rest of the law remained the same.)<sup>9</sup>

By enacting the law of July 2010, the Verkhovna Rada (Parliament) established a new system of state regulation in the sphere of communal services – different from the one that existed since the independence of Ukraine (1991) – by establishing a *national* regulatory body.

This national regulatory body – the National Communal Services Regulatory Commission (referred to in this paper as the “Commission”) – was given the major responsibility for tariff-setting in publicly provided water supply and wastewater collection and treatment, and in the production, transportation and supply of heat energy sectors.

In the *water and wastewater sector*, the national regulator sets tariffs for: utilities that serve more than 100,000 inhabitants; utilities whose systems are located on the territory of two or more oblasts; joint enterprises (i.e. joint ventures between municipality and private sector company); and enterprises with foreign investment. Local self-governments set tariffs for utilities that are not regulated by the national regulator.

In the *heating sector*, the national commission sets tariffs for utilities that have an installed capacity of more than 20 Gcal per hour, while local self-governments are authorized to set tariffs for smaller companies. In addition, local self-governments continue to have responsibility for setting tariffs for those centralized heating services and hot water supply services that provide heat to individual apartments in multi-apartment buildings.

The *Cabinet of Ministers of Ukraine* has the authority for approving tariff-setting rules for housing and communal services. Currently, such rules are set out in Council of Ministers Decree (“CoMD”) #869 of June 1, 2011 “On ensuring a unified approach for tariff-setting for housing and communal services”. CoMD #869 contains tariff-setting rules for several municipal services sectors – water supply, wastewater, district heating, housing maintenance, supply of electric energy (for residents), and natural gas supply (for residents).

The law of July 2010 also empowers the Commission with the right to prepare and approve its own tariff-setting regulations. Thus the National Energy Regulatory Commission (“NERC”), acting pursuant to the law as a temporary national regulator for communal services, developed its own tariff-setting methodology and approved it by its Resolution #242 of February 17, 2011 “On Approving tariff-setting order for heat energy production, transportation and supply”. It is unclear how the Commission will exercise its legal power to determine tariff-setting rules by its own resolutions in the light of CoMD #869 (June 1, 2011), by which the Cabinet of Ministers took on this function itself.

It is a common practice in Ukraine for tariff-setting rules (approved by CoMD #869, NERC Resolution #242, etc.) to refer to various *instructions, methodologies*, etc., which are approved by central executive bodies (e.g. ministries) within their powers. These

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<sup>8</sup> № 2479-VI of July 9, 2010.

<sup>9</sup> № 3610-VI of July 7, 2011.

methodologies and instructions specify rules for the calculation of utility-specific norms for material and labor resources, and general (industry-wide) norms relating to losses.

In summary, the existing legal and regulatory framework for tariff-setting is multi-layered and complicated. There is no agreement between various legal provisions and definitions, which at present creates significant regulatory risk for the regulated companies. Many of the documents that define rules for calculating utility-specific norms are treated by the sectors' participants as outdated or inadequate for application to real practice. Whether these norms should be adjusted to modern management practices or whether the present system of norms should be replaced by a different approach – one based less on rigid prescriptions and more on creating *incentives* for efficient performance – is a question for the new regulator to reflect on and answer.

### 3.1.2 The new regulatory commission

The National Communal Services Regulatory Commission (the “Commission”) is the state collegial body that is responsible for carrying out state regulation in the spheres of communal services such as centralized water supply, wastewater and production, and transportation and supply of heat energy.

The Commission commenced its operation in July 2011.<sup>10</sup> Between July 2010 and July 2011, NERC carried out these functions on a temporary basis, as envisaged by law № 2479-VI of July 9, 2010.

The Commission took over from local self-governments the power for setting tariffs for water, wastewater, and heating services, and the setting of technological water-loss norms for water and wastewater systems (allowable amount of losses for recovery in tariffs).

No official reason has been given for taking regulatory powers away from the local self-governments. Standard phrases like “balancing of interests of market participants” are used to justify the establishment of a *national* regulatory body. Politicians have stressed the political dependence of local self-governments on public opinion in their decision making process related to tariff increases – creating a bias to keeping them low – which made them ineffective as independent regulators since 1997.<sup>11</sup>

There are certainly both advantages and disadvantages in introducing a regulator at the national level to cover local services,<sup>12</sup> but this is a moot point. The law is in effect, and local self-governments now need to organize their activities within the new regulatory environment to ensure the provision of local utility services to the community.

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<sup>10</sup> Decree of the President of Ukraine “On Establishing the National Commission of Communal Services Market Regulation of Ukraine”, №743/2011 of July 8, 2011.

<sup>11</sup> The year of enacting the Law of Ukraine “On Local Self-governments in Ukraine”, May 21,1997, № 280/97-VR.

<sup>12</sup> Interestingly, the arguments on the two sides today (in many countries, not just Ukraine) are similar to arguments made in the early 20<sup>th</sup> century in the U.S. in the debate on the merits of regulating municipal services at the municipal level versus the state level. In the U.S., state regulation won out for privately owned utility companies, but municipally owned services continued to be regulated at the municipal level.

Only 68 water and wastewater utilities out of the 6,000 that submit information on their operation in the water supply sector are regulated by the Commission. The others, many very small in size, are regulated according to the old system, with local self-governments setting tariffs and water-loss norms, and oblast state administrations issuing licenses. The situation is similar in the district heating sector. National statistics show more than 33,000 boiler houses operating in Ukraine. A significant number of them are operated by licenses given by the Commission,<sup>13</sup> while tariffs for many small operators will be set by local self-governments.

So two types of authority hold the power to set tariffs for the regulated sectors: the local self-governing authorities and the Commission – depending on the population of the service area (for the water and wastewater sector) or on installed capacity (for district heating).

Two laws specify the structure of the Commission, the number and tenure of commissioners and the staffing of the Commission. These are the laws “On Natural Monopolies” and “On State Regulation in the Sphere of Communal Services Market” (see Annex 1).

The Commission, as with any other national commission in Ukraine that regulates the activities of natural monopolies (only NERC at present), consists of the Chairman and six Commissioners who are appointed and dismissed by the President of Ukraine and report to the Verkhovna Rada. The Chairman and Commissioners are appointed for a period of six years and cannot hold the position for more than twelve years in total.

The Chairman or a Commissioner may be dismissed only in the cases specified by the law, namely: (i) resignation; (ii) termination of Ukrainian citizenship; (iii) inability to fulfill their obligations due to state of health; (iv) coming into legal force of a judgment of criminal conviction.

The Commission is permitted to set up territorial offices, but these would not have the status of separate legal entities. Territorial bodies can act on the basis of regulations approved by the Chairman of the Commission. The administrative staff perform organizational, technical, and other activities.

The President of Ukraine approves the staffing limits of the Commission. The Chairman approves the staffing structure of the Commission – within the budget assigned for the Commission in the State Budget of Ukraine – by agreement with the Ministry of Finance. Up to December 2011, the Commission had fewer than 50 employees; after that the number began growing. The present limit by law is set at 412 employees.

All of the present Commissioners have past experience in the municipal-services or energy sector. The Chairman’s most recent position is as Head of the Sevastopol administration. Two of the Commissioners have prior regulatory experience in NERC. One of the Commissioners is an ex-Minister of Housing and Communal Economy. Detailed information about the Commissioners’ backgrounds is available publicly on the Commission’s website.<sup>14</sup>

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<sup>13</sup> There is no exact number available in the official statistics.

<sup>14</sup> <http://www.nkp.gov.ua>

## 3.2 Tariff-setting methodology and procedures

### 3.2.1 Present rules<sup>15</sup>

In 2011, the President of Ukraine expressed his concern to the Government that there were numerous regulatory documents that set out tariff-setting rules for entities providing municipal services, documents issued by different entities – Cabinet of Ministers and national regulator (NERC at that time).

The Cabinet of Ministers responded by approving CoMD #869 of June 1, 2011 “On ensuring a unified approach for tariff-setting for housing and communal services”. This decree compiled in a single document tariff-setting rules for several municipal services sectors – water supply, wastewater, district heating, housing maintenance, electricity (for residential customers), and natural gas (for residents).

The price setting methodology in CoMD #869 is based on a “cost plus” approach. The formula for calculating the price in the base tariff-setting period can be expressed as follows:

$$P_0 = \frac{TAC + PP}{V},$$

where

$P_0$	=	price set in the base tariff-setting period (Year 0);
$TAC$	=	total projected allowable costs (including depreciation and taxes);
$PP$	=	projected profit; and
$V$	=	projected volume of goods or services sold.

Allowable costs are grouped into categories that are defined by the national accounting standards and include:

- direct costs;
- production overhead costs;
- administrative costs;
- billing and collection costs;
- other operating costs; and
- financing expenses, related to attracting financing for investments.

Tariffs are built up from costs projected over a one-year period, but they do not take into account forecast inflation. Most of the costs are calculated using quantitative “norms”; these are used for the major cost items, such as labor, material resources such as energy (gas, electric energy), water, and chemicals. Norms for calculating key cost items are utility specific and have to be defined by the utility company based on various regulations of central executive bodies (ministries, committees, etc).

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<sup>15</sup> The description of the tariff-setting methodology in this section is based partly on the “Report on the Overview of the Tariff-setting Process and Tariff Methodology in the Sphere of Centralized District Heating in Ukraine”, prepared by the Municipal Development Institute for the USAID-funded Municipal Heating Reform Project.

The role of company-specific norms is to encourage the regulated company to limit its use of particular resources. The utility calculates the need in material resources (and hence the cost it will be allowed to recover) based on the norms and on the projected volumes of production and sale of heat, water, or wastewater.

The labor costs of a particular licensee are limited to the average salary levels in the industry as a whole in Ukraine or in a specific region. For example, if the weighted average cost of labor per employee of the licensee is higher than average for Ukraine, the limit is set in relation to the average salary in the industry for the region.<sup>16</sup> The number of employees is also limited to a certain number based on calculated normative levels (e.g. related to the length of the networks) and the actual number of staff in the year prior to the planned one.

Regardless of company-specific conditions, the regulators set parameters for losses that are the same across the entire industry. There is no explicit limit set out in CoMD #869, but such limits are derived from other methodologies or instructions issued by the central executive bodies. For example, in the heat sector the losses are limited to 13–15% of the volume of heat supplied into the network (the exact percentage depending on the length of the networks), and in water to 30% of the potable water quantity that is supplied into the network.

Planning of costs depends on projecting consumption volumes. An insignificant number of residential accounts are metered. The Commission has the goal of 100% metering of consumption at the level of multi-block buildings, and 100% metering of all other customers' groups accounts. By the end of 2012, the Commission plans to develop an action plan for motivating residents to install meters at the level of apartment buildings.

For regulatory purposes, utility companies are allowed to recover only expenditures that are allowed to be deducted in calculating profit tax (and note that tax legislation changes practically every year). Nevertheless, the current tariff-setting methodology does not allow utilities to recover *all* expenditures that are acceptable as deductions for the calculation of profit tax – such as bad debts, costs related to maintenance of social infrastructure (if any),<sup>17</sup> contributions to trade unions, amounts of penalties or financial sanctions, costs related to damage of assets, currency exchange rate losses, charitable contributions, and costs of sales of production inventory.

Depreciation is an allowable expense as well. Its amount for regulatory purposes is determined by the tax rules. The Tax Code does not allow deducting depreciation expenses if the assets were not built or purchased by the utility but were transferred free of charge by another party (including state, local self-government, or other legal entity). If the assets are financed by the owner and added to the company's balance sheet, then they are depreciated for tax purposes – and hence for tariff-regulation purposes.<sup>18</sup>

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<sup>16</sup> Resolution of the NCRCSM #2 of September 1, 2011 “On approving the mechanism of defining the labor costs fund of the licensees in the sphere of centralized water supply, wastewater and production, transportation and heat energy”.

<sup>17</sup> Social infrastructure comprises, e.g., recreation facilities, saunas, swimming pools, stadiums, kindergartens, and summer camps for children.

<sup>18</sup> The issue of whether a utility company should be allowed, for tariff-setting purposes, to depreciate assets contributed by other parties is a heatedly debated issue internationally in the regulatory field. There is no clear consensus.

Utilities are permitted to include interest expenses resulting from their financing activities in tariff calculations. For regulatory purposes, these are interest expenses for loans received for investment purposes relating to the company's main activity. Any loan must be approved in advance by the regulator.

The Law of Ukraine "On Natural Monopolies" requires utilities to separate accounts for (i) licensed types of activity (water supply, wastewater, production, transportation and supply of heat energy) and (ii) non-licensed types of activity. Most of the utilities are at the initial stage of this process. No regulatory requirements have yet been set for this issue.

The price setting order (CoMD #869) recognizes allowable profit, dividends, repayment of loan principal and equity contribution, and formation of reserve capital. All utilities should project profit based on an approved capital investment program, which has to be supported by business plans or other technical and economic justification.

No methodology is given at present for determining the appropriate level of return on investments made using shareholders' equity – a crucial issue for any private sector investor. It is not linked in any way to the market cost of equity capital. The amount is negotiated with the regulator based on an assessment of future investment needs and an impression of the affordability of tariff levels.

Common practice in Ukraine for preparing an investment program by the utility involves the defining of investment needs for the year ahead, with a break-down by individual projects, and a matching of needs with sources of financing. According to CoMD #869, the regulator should define the format for the investment program.

In April 2012, the Commission made public a draft regulation for preparing and submitting the investment program for approval of the Commission. This draft regulation specifies the need for the regulated company to describe in detail the types of investments that it plans to make during the next 12 months or during any other projected period. The company should also specify in detail the financing plan by source of funding (depreciation, so-called "production investment from profit", borrowed funds, other financing which has to be paid back and which does not have to be paid back, and state subsidies). The regulation would also require the utility company to submit justification for every cost item exceeding UAH 10,000 in value.

Cash flow generated by the depreciation allowance is not permitted to be returned to investors because, according to the laws on lease and concession, private operators are obligated to reinvest funds in municipal infrastructure in the amount of depreciation. So the only source of funds to be used for repayment of investments is the profit component negotiated with the regulator.

Tariff review procedures for the regulated sectors in question are currently defined only by the resolutions issued by NERC while it was acting as temporary regulator.<sup>19</sup> The Commission or the licensee can initiate a tariff review. The licensee can apply to the Commission for a tariff review under the following conditions: if the volumes sold change

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<sup>19</sup> NERC Resolution #244 of February 17, 2010 "On approving procedure of setting tariffs for production, transportation and supply of heat energy" and Resolution #245 of February 17, 2010 "On approving procedure of setting tariffs for water and wastewater services".

by more than 5% from the level assumed in the current tariffs; if the investment program would result in a change of the tariff level of more than 5%; or if a change in taxes or fees, or the level of wages, lease payments, depreciation expenses, prices and tariffs for energy and fuel, or other material resources, leads to an increase in the tariff level of more than 5 %.

The Commission can itself initiate a tariff review in a number of circumstances, including: if the licensee has not implemented the investment program as it was envisaged in the current tariff; if there has been an inappropriate or unjustified use of funds envisaged in the current tariffs; if there has been cross subsidization between licensed and non-licensed types of activity; if the licensee has not followed statutory procurement rules; if the licensee provides the regulator with untrue information.

It is not clear if these rules apply today because there has been no practice of full tariff reviews from the time that the functions were transferred to the national level. However, the provisions above are still in effect.

### **3.2.2 Planned and proposed changes<sup>20</sup>**

There have been discussions recently among various stakeholders about needed changes in tariff-setting rules and the introduction of principles of “incentive regulation” (in which targets are progressively refined based on actual performance in response to incentives) and the fixing of at least a mid-term planning horizon (3–5 years) as a way to allow more predictability. As the first step in this direction, NERC is considering the introduction of the conventional “regulatory asset base” (“RAB”) notion.

In 2011, NERC recently made available to the public a draft methodology “Methodology of Formation of the Necessary Income of the Licensees from Power Transmission via Local Power Networks and Supply of Electric Power According to a Regulated Tariff (Based on Multiyear Stimulating Regulation)”. It is heavily based on a similar methodology used in Russia.

The issue that the Commission wants to solve at present is what approach should be taken to set effective incentives to operators for cost reduction, mainly reduction of energy consumption (except for natural gas) by 3% per annum to 2014. The main difficulty is how to set such incentives for *publicly* owned companies (which make up most of the operators in the municipal sectors) and to remove existing obstacles to attracting private sector investments.

Another important concern of the Commission in adopting new tariff-setting approaches is to find a way to set justifiable limits for investments (and for tariffs overall) so that the tariffs become affordable for the majority of the population.

In the water supply sector, the Commission is considering implementation of “block tariffs”, in which the incremental unit price would increase in steps as consumption per customer increases. The introduction of block tariffs is viewed by the regulator as a tool for achieving cost recovery, rational use of water resources, and incentives to install meters (the highest average tariff would be for unmetered consumption), while assuring protection of low income

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<sup>20</sup> This section is based largely on discussions with the Commission that were held within the framework of the USAID-funded Municipal Heating Reform Project.

households due to the lower tariff for the first two cubic meters of consumption per month – the “lifeline” tariff.

### **3.3 Tariff reviews by the new commission**

The law (№ 2479-VI, art. 10) specifies that the regulator sets tariffs in accordance with the orders (methodologies) it develops.<sup>21</sup> During the short period since NERC was given responsibility for regulating communal services (July 2010–July 2011) and then the Commission was given the responsibility (July 2011 to the present), several tariff reviews have taken place. But all that has occurred in these reviews is inflation indexing for the cost of electricity and gas. No adjustments have been made to other variables, including other costs.

For heating utilities and centralized water and wastewater utilities, tariffs for those companies that requested reviews were reviewed twice: by NERC in December 2010–January 2011; and by the Commission in September–October 2011.

The primary reason for the abbreviated reviews is the work overload of NERC and the Commission, as well as the organizational changes in both commissions due to changes in the legislation.

As of December 2011, there were 68 water and wastewater utilities that fall under the jurisdiction of the Commission.<sup>22</sup> Three companies are operated by private operators based on lease or concession contracts with the municipalities (Odessa, long term lease; Luhansk and Kramatorsk, concessions). In the district heating sector, 268 utility companies fall under the Commission.

For the period from July to December 2011, the new regulator had less than 50 employees; in December 2011, the number of employees grew to 160, and it is still increasing – but cannot exceed the limit of 412 as defined by the Presidential decree. Given the fact that the Commission, newly created, has no prior history of regulation, this is clearly just the beginning of the path to a comprehensive and sound system of tariff regulation for the utilities falling under its jurisdiction.

## **4. PRINCIPAL ISSUES AFFECTING REGULATORY RISK**

### **4.1 Methodology**

It is clear from the description in section 3.2 that Ukraine is actively developing and refining the methodology used to set tariffs in the regulated sectors, and that there has been an effort to move towards common international practice in a number of areas. Nevertheless, there is room for improvement in certain ways that would tend to reduce regulatory risk.

Some of the main deficiencies in methodology are summarized as follows:

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<sup>21</sup> Note, however, that the law also states that decisions that allow tariffs that are lower than economically justified need to be approved by the Cabinet of Ministers of Ukraine.

<sup>22</sup> Data provided by the Commission on December 28, 2011.

- The regulatory review looks only one year ahead in determining tariffs. Thus, among other disadvantages, this does not encourage the planning and implementation of multi-year investment programs. Also, the unpredictability of the regulator's decisions is amplified the more often a tariff review takes place.
- There is no automatic indexation of tariffs between reviews. Given inflation in Ukraine, this means that real (constant-price) tariffs tend to fall below cost-recovery levels as time goes by between reviews.
- With respect to operating costs, there are fixed maximums (norms) set for some of the values (e.g. losses), regardless of what a reasonably efficient company would be capable of in the short or medium term.
- Regulatory depreciation is based on tax rules, but these are not designed for purposes of economic regulation – and they can change unpredictably for reasons of tax policy and practice, not economic regulation.
- With respect to capital costs, there are no explicit rules for determining how allowable profit (return on equity) is to be determined. This creates considerable uncertainty for private sector companies.
- The full amount of depreciation must be reinvested in system's assets; so depreciation cannot function as a return of shareholders' investments.
- A company can request a new tariff review only if it can be shown that new tariffs would be at least 5% above the existing tariffs, but there are no provisions to allow for the recovery of the losses sustained up to the date of the new tariffs.

## **4.2 Inconsistency between the terms of PPP contracts and regulation**

There has been no systematic attempt to think through and harmonize the terms of PPP contracts (mainly concession and lease contracts) used for the regulated sectors with the powers of the regulators. In practice, tariffs are often set by the regulator on the basis of assumptions that may be inconsistent with the provisions of the concession or lease contracts that govern the private sector involvement. For example, an operator may have investment obligations set out in the PPP contract, but which are implicitly ignored by the regulator in setting tariffs. The operator may then not be able to comply with its investment obligations and be in (technical) breach of contract.

This inconsistency is not as important for local regulation since the municipality is both the contracting party and the regulator. But it becomes more apparent and potentially problematic when the regulator is the Commission but the contracting party is the municipality.

This is by no means a problem arising only in Ukraine; it is common in many countries that rely both on the regulation-by-contract tradition and the regulation-by-commission approach (see section 2). In some countries, the contract approach was the original method used and the commission approach is adopted later and is layered on top of the contract approach without thinking through the consequences. Such "hybrid" regulatory regimes are prone to inconsistency and confusion if not designed very carefully.

If regulation by a regulatory commission is going to be the dominant mode of regulation for full-scope utility systems in the water, wastewater and heating sectors in Ukraine, then the

contents of the contract that brings in the private company should be reduced to a minimum. Some would say it is a misnomer to continue to call it a “PPP” contract; at least it becomes very different from the classic (best practice) PPP contract.<sup>23</sup> In consequence, the investments required to achieve specified levels of service should be determined as part of the tariff-setting process. If the company is regulated by the Commission, the contract between the municipality and the company should not set out specific investment obligations that relate to achieving or maintaining service standards.

### 4.3 PPPs for potable bulk water supply and wastewater treatment

In a PPP in which a utility company pays a PPP company for bulk water that then enters the distribution system, or pays the PPP company to treat wastewater that the utility company delivers to the PPP company by way of the sewage pipes, the price of bulk water or of wastewater treatment services is not directly regulated under Ukrainian law since the price is not a tariff charged to the end user. It is a price charged to the utility company for goods or services, similar to the price the utility company pays for the chemicals or spare parts it purchases.

For this reason, in the first analysis, a PPP for potable bulk water or for wastewater treatment would seem to be free of regulatory risk. But this is not the entire story. In setting tariffs, the regulator scrutinizes the proposed cost of inputs, and so this price would be examined along with all the other input costs of the utility company. Provided that the payments that the utility company will be obligated to make to the PPP company are based on a good-practice arms-length contract, it is likely that the regulator will not contest them, although there is not much experience in Ukraine to use as precedent.

A deeper problem arises if, regardless of formal methodology, the regulator informally looks at the overall tariff level and will try to find some way to keep tariffs low. There was a sense among the operators interviewed (see section 5) that if the regulator (at either the local or national level) wanted to keep retail tariffs low, it would find a way to do so, regardless of the utility company having included the contractual payments made to the PPP operator in its projected costs. For instance, the regulator might clamp down harder on costs found elsewhere in the cost projections. So the *indirect* regulatory risk might be significant.

One way around this problem would be to require in a PPP agreement for bulk water supply or wastewater treatment a payment guarantee from the municipality which would be triggered if the utility company does not make the required payment to the PPP company. There is no good reason why a municipality would not agree to this kind of guarantee if it is the *municipality* that is regulating retail tariffs, since the risk of the guarantee being triggered would be something squarely within the municipality’s control. A municipality might be less willing to bear this risk if it is the *Commission* that is regulating tariffs, since that is something outside the municipality’s control.

In either case, it would be important to assess the creditworthiness of the municipality – unless another more creditworthy entity (e.g. the national government) backstops the municipal payment guarantee.

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<sup>23</sup> See footnote 2, above.

## 5. OPINIONS OF PRIVATE SECTOR COMPANIES

In order to gauge the opinions of private sector companies working in the regulated utility sectors in Ukraine – both foreign and local companies – interviews were conducted specifically for this purpose with five operators in the municipal water and heating sectors in January 2012. In addition, discussions of these issues have taken place over the past few years with private operators in various contexts.

Of the five interviews conducted specifically for this paper, two interviews were with private operators in the water and sanitation sector and two in the district heating sector. One of the companies operates in both regulated sectors. The companies spanned the range from small to large in terms of their activities. Interviewees were promised confidentiality to encourage them to offer their frank views.

It is important to emphasize that what is presented in this section are the *opinions of the operators*, which may not be an entirely accurate reflection of how the regulatory system works in Ukraine.<sup>24</sup> Nevertheless, what the private sector tends to believe is important, apart from whether these are beliefs are true in all respects. The companies' *perception* of regulatory risk can serve as an obstacle to the development of sound PPPs, regardless of how well founded such beliefs are.

Most of the opinions received reflect the experience of the companies being regulated by *municipalities* because that was the practice for the sectors before July 2010 (see section 3.1.2). Since the companies have so little to go on in terms of what it will be like to be regulated by the Commission – only the limited reviews that have taken place so far – their opinion of regulation and regulatory risk in general is colored by their past experience of being regulated at the municipal level. However, nothing they have experienced so far in being regulated by NERC or the Commission has given them much reason to modify their opinions.

When the term “regulators” (without any qualification) is used below, this refers to a general statement about regulation in the sectors, regardless of who the regulator is.

There is a general view that regulators are under political pressure to keep tariffs low, in disregard of the true cost of providing service. This is accomplished in a number of different ways, according to operators. Sometimes levels of service are implicitly held down by allowing only minimal investment programs – e.g. enough to permit water supply for 12 hours a day instead of 24.

Where the norms give regulators some discretion about which value to adopt (e.g. where they can select a value within a specified range), there is said to be a tendency for regulators to choose the values that result in the lowest tariffs.

At the local level, operators say that municipalities sometimes do not make any serious attempt to justify the tariff calculations by reference to the required methodology; they simply set tariffs at the level they want.

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<sup>24</sup> For the avoidance of doubt, note also that the opinions of operators expressed in this section do not necessarily reflect the views of P3DP or USAID.

With respect to the new national-level regulation, it is generally felt that the recent price reviews that corrected only for inflation in gas and electricity prices did not adjust tariffs sufficiently. The companies' first experience with the new national-level regulatory regime has therefore not been encouraging.

Not setting tariffs at a high enough level to cover all legitimate costs can have amplified consequences. If the companies cannot pay their bills, there may be high penalties to pay, which cannot be recovered by the utility company under the regulatory rules. Naftogas, for example, charges a penalty of twice the national bank rate plus seven percentage points. Moreover, the utility director can be held *personally* liable for the nonpayment of bills – e.g. taxes, salaries, gas payments, electricity payments.

Several companies offered the opinion that it would be impossible to have a truly *independent* regulator now, given current Ukrainian political and administrative culture, especially given political pressure to keep tariffs at a level considered to be affordable.

Companies say there is more acceptance among politicians at the national level that *electricity* prices had to rise. This, they say, may partly be the result of the stronger lobbying power of the energy companies. In any case, this same understanding does not exist yet concerning water or district heating prices.

There was a general consensus that regulation at the local level is *riskier*, in the sense of it being less predictable, than regulation at the national level. First, it varies from municipality to municipality. Second, it is highly dependent on whoever the mayor is at the time. Third, local regulation in Ukraine (as practically everywhere in the world) is highly subject to the electoral cycle: no incumbent politician wants to see tariffs rise just before an election.

In general, local governments often do not show a good understanding that a private sector company needs to recover its costs – and that reasonable profit is a cost like any other.

Companies said that the territorial bodies of the state price control inspectorate, when it existed, seemed to do a fairly good job in verifying costs as a preliminary step before tariffs were set by the municipality. (The role of the inspectorate was to carry out a review of the calculation of cost elements of the tariffs before the local authorities made tariff-setting decisions.) The impression is that this prior review was effective in partially mitigating regulatory risk at the local level.

At least the regional offices had professional staff, which many small local self governments do not possess, and since regulation was carried out at the local level, the regional offices had local knowledge of the companies and their circumstances.

The involvement of the price control inspectorate was terminated with the establishment of the national regulator in July 2010. The inspectorate was liquidated by the central governmental decree of March 2011.<sup>25</sup> Now the state price control inspectorate has been done away with so there is no check over local tariff regulation in regulated sectors.

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<sup>25</sup> Pursuant to Presidential decree #19/2012 of January 19, 2012 “On State Price Control Inspectorate”, the inspectorate as a central executive body has been renewed. However, so far it has no specifically defined functions related to tariff regulation in the sectors under consideration in this report.

Operators says there is very little practical possibility of appeal from regulatory decisions, either at the local or national level – even though appeal in court of a regulator’s decision on tariffs or the levying of penalties is permitted under law. It is very rare for a company to go to court even over a *local government* tariff decision. Companies believe that the judicial system is highly politicized: if an operator went to court, it is likely (they say) that the system would be mobilized against it in numerous ways.

In addition, any precedent of going to court against the local self government could bring bad publicity to the private operator and spoil relations with the key executives in the local self-government.

At the national level, companies believe that the courts would generally side with the national regulator as a matter of politics rather than the merits of the case. But one company said they might go to court if, first, it was an issue that was very important to them, and second, if they were sure they had a clear and unambiguous case in their favor.

Companies survive in the sectors often (they say) because they have managed to develop ways to get around or maneuver through the system. Companies state that a culture of gaming and lack of transparency is prevalent.

For example, some get around the rigid norms by hiding costs they cannot recover (e.g. losses above the normative limits) in other, recoverable, cost items. Private operators can figure out other ways to make money from the system. For example, a company might buy certain goods (e.g. pipes) from an affiliate company at inflated prices and use the gain to compensate for the regulator squeezing other budget lines.

It was stated that the private companies that are making efforts to expand their activities in this market are generally doing so because of related *unregulated* activities, not the regulated utility service alone.

For foreign utility companies, *regulatory risk* related to tariff-setting is the key risk they face. This is more of a barrier to them than to local companies. This may be so because they cannot always out-maneuver and game the system as well as the local companies can.

According to the interviewees, several well-known foreign firms have explored the market from time to time, but most have decided not to become involved in any substantial way in these sectors now. Some are interested mainly in selling equipment. Some see a modest initial involvement as a way to get into the market, a stepping stone. They take a strategic long-term view.

There is only one foreign company involved in the district heating sector at present; it is in Artemivsk – a Lithuanian company. Russian companies are involved in several water companies.

In the case of district heating, the general view seems to be: (i) demand is more uncertain since there are alternative methods of supply, (ii) there are added risks because the price of gas is risky and makes up a large proportion of costs (and cost changes are not fully reflected in tariffs); and (iii) heat makes up a larger proportion of disposable household income and so its price has a greater impact than the price of water.

The water sector is said to have less risk because there is a captive customer base; customers have no realistic alternative to buying water from the utility company.

One particular problem for foreign firms is that the tariff methodology does not allow for increases in the UAH values in their balance sheet relating to foreign currency purchases or loans if the UAH depreciates relative to the foreign currency. Purchasing or borrowing in foreign exchange may represent good business judgment in present circumstances, but it is impossible for the company to hedge currency risk. So the company may end up taking a loss if the UAH depreciates.

As for possible ways of improving regulation of tariff setting in these sectors in Ukraine, most companies could not come up with concrete recommendations. As expected, since the problem is seen mainly as the inability so far to shield the process from arbitrariness and political influence, questions about specific methodological questions did not receive much attention.

One interviewee noted that it would be good to have more detailed procedures for the conduct of a price review – the exact steps and who submits what to whom and when. Several companies also called attention to the need to eliminate conflicting provisions of the law.

There was a general sense that, ultimately, the best solution for privately owned utility companies lies with regulation at the national level, as opposed to the municipal level. Local regulation is not ultimately the solution, they say. But no one had a clear idea of how to minimize what they consider to be political influence over tariff-setting at the national level.

One company said a demonstration project should be adopted that would remove regulation from the national and local regulator and that would carry out tariff-setting using a panel of independent experts acting according to best regulatory practice. The experience should be carefully documented so that lessons could be learned and applied on a broader scale. Such an “experiment” would need at least a Cabinet Decree and possibly a new law (primary legislation) to temporarily take the target city or cities out of the jurisdiction of the normal regulatory regime.

## **6. WAYS THAT UKRAINE COULD REDUCE REGULATORY RISK AND ENCOURAGE MORE PRIVATE SECTOR INVOLVEMENT IN THE SECTORS**

This section outlines several broad suggestions – mainly concerning methodology – for ways to reduce regulatory risk. It is not within the scope of this paper, however, to propose *specific changes* to methodologies or procedures. Moreover, the paper does not consider possible institutional changes.

Of particular concern to private-sector investors is whether the regulatory methodology gives them confidence that they will be able to receive a return *of* and *on* the investments they make into the service system. The discussion below therefore begins with these two aspects (in sections 6.1 and **Error! Reference source not found.**).

## 6.1 RAB-based methodology

The present methodology in Ukraine follows a “cost plus” approach in the sense that a profit allowance is added to the other costs of the utility. The methodology previously used in Ukraine determined the profit allowance as a specified percentage of the amount allowed for all other costs; that percentage being 12%. The previous approach was not adequate and not consistent with good international practice. In the present methodology, there is no clear method – and no quantitatively based rules – for how to determine the profit allowance.

According to current best international practice, there are two sound approaches for determining the profit allowance in utility tariff regulation relating to private-sector (investor owned) companies. They can be called the “regulatory asset base” (RAB) approach and the “net present value” (NPV) approach. The two approaches give the same results but they go about the calculations in a different way. The RAB approach is much more common where tariffs are regulated by an agency or commission (as opposed to being regulated by the terms of a PPP contract), and so only the RAB approach will be discussed here.

The RAB approach keeps track of a key value called the **regulatory asset base** (or in common U.S. terminology, the “rate base”). Capital expenditures (CAPEX) increase the RAB and depreciation decreases it:

$$\text{RAB}_{\text{end of period}} = \text{RAB}_{\text{start of period}} + \text{CAPEX} - \text{Depreciation},$$

where “CAPEX” here includes only that part of CAPEX financed by the utility company.

Loosely speaking, the RAB can be thought of as the outstanding value of the investments that the company has made. The company is entitled to receive a return on the RAB, determined by multiplying the RAB by the company’s cost of capital (more precisely, the weighted average cost of capital – WACC). This is analogous to a person making an investment by purchasing shares or bonds and then earning a return on that investment. Under a RAB-based methodology, a regulated company has confidence that if it uses its money to make an investment, it acquires the right to a return *of* and *on* that investment. This limits the discretion of the regulator in an important way. (In U.S. law, a *property* right is thereby created that is Constitutionally protected by the Fifth Amendment “takings clause”.)

The basic formula used in the RAB approach for determining the amount of revenue that the company is entitled to receive (from customer tariffs or otherwise) in any given period is the following (variants of this basic formula are used in different systems):

$$\text{Allowed Revenue} = (\text{WACC} \times \text{RAB}) + \text{Depreciation} + \text{OPEX}$$

(OPEX means operating and maintenance costs, including taxes.)

Special regulatory accounting rules must be adopted to address how to update the RAB periodically and how to determine depreciation for regulatory purposes.

Note that in the formula above, OPEX would not include interest to be paid on loans – otherwise there would be double counting since the RAB includes assets financed by debt and the WACC includes interest on loans.

To separate out debt, a modified formula such as the following – closer to the method used in Ukraine – could be used:

$$\text{Allowed Revenue} = \{ \text{Cost of equity capital} \times (\text{RAB} - \text{Outstanding debt}) \} + \text{Depreciation} + \text{OPEX},$$

where opex here *would* include interest on outstanding debt.

To move the methodology in Ukraine to a RAB approach by making the fewest modifications, it could be specified that projected profit in the formula given in section 3.2.1 (“PP”) is to be defined as:<sup>26</sup>

$$\text{Cost of equity capital} \times (\text{RAB} - \text{Outstanding debt})$$

The “cost of equity capital” is the minimal required market rate of return on shareholders’ investments, given the expected riskiness of the cash flows and the leverage of the company’s capital structure.

The RAB-based formulas shown above, in one variant or another, constitute the basic method now used by most utility regulators around the world.

One nice additional advantage is that RAB is the value that the municipality in principle should pay to the company if the arrangement were terminated and the municipality took back the assets and ran the company itself since the RAB represents the value at that time to investors of the company’s assets. So using the RAB can simplify the problem of how to specify termination payments in a PPP contract.

Moving to a RAB approach is not something that can be done by just writing up a few pages of instructions. It would require a substantial effort to develop even a simple yet operational system of principles and rules.

## 6.2 More flexibility regarding depreciation

In a regulatory framework, the amount of depreciation is of key importance since it represents the return to investors of the funds invested. (See how it operates in the formulas given in section 6.1.)

There are two weaknesses of the present regulatory methodology in Ukraine in this regard. *First*, the methodology relies on tax rules to calculate depreciation for tariff-setting purposes. The goals of economic regulation are different from those of the tax system, and depreciation rules should be developed that are appropriate for tariff regulation.

*Second*, in Ukraine the entire depreciation allowance must be reinvested in system assets; it cannot be used to pay back investors. This is too rigid. In international practice, funds from the depreciation allowance are often used for re-investment in the company (to the extent necessary – based on the approved investment plan), but they can also be used for financial returns to investors. At the moment in Ukraine, additional investments in many utility system are sorely needed and so it may be reasonable in most cases that the required amount of

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<sup>26</sup> Dealing with debt in this way simplifies the cost of capital calculation but weakens the incentive for the utility company to borrow debt as inexpensively as possible. While ways can be introduced to mitigate this deficiency (e.g. prudence tests), most regulatory experts would agree that this method is inferior to the WACC-based approach shown first.

capital expenditures will equal or exceed the depreciation allowance for a given period. But as a matter of principle, the two items CAPEX and Depreciation in the formulas in section should operate independently. These statutory restrictions on the use of depreciation funds should be eased.

### **6.3 Scheduled multi-year control periods, with automatic inflation adjustments**

At present, according to the regulatory rules in Ukraine, regulators set tariffs by projecting costs for one year ahead, and a review generally takes place only when a utility company requests one. This aspect is similar to how utility regulation works in the U.S. It makes sense more in a utility system that has reached a steady state, with predictable and smooth maintenance and replacement expenditures planned for the future.

Modern utility regulation (influenced heavily by regulation in the U.K.) tends to favor fixed multi-year control periods and scheduled reviews – typically every 3–6 years, with tariffs (or certain tariff components) being indexed to inflation between reviews.<sup>27</sup> Tariff revenue becomes insufficient over time because of general price increases that affect many input costs. Tariffs should therefore be adjusted annually for inflation between full reviews using either a general price index (e.g. consumer price index) or a composite index (e.g. weighted average of different price indices).

The underlying idea is that this creates strong incentives by allowing the utility company to keep a significant part of the gains it makes over the fixed period between reviews (“control period”) and to bear a significant part of the losses – provided that those gains and losses result from actions that are substantially within the control of the company. A multi-year control period gives the company more predictability so that it can confidently undertake multi-year investment programs and be assured that it can recover the costs of such programs.

Also, the fixed nature of the multi-year review permits a well-defined methodology to be used for the review process, including the submission by the company of a business plan covering the future control period.

### **6.4 More flexible use of norms in setting tariffs**

Even though not all regulatory agencies rely as heavily on “norms” as Ukraine does, there are nevertheless many analogous approaches to estimating the reasonable or allowable costs of a natural monopoly company. Probably one of the most common approaches is generally termed “benchmarking,” where physical input quantities or costs of various items are compared across regulated companies within the same sector (or even within similar sectors). Sophisticated approaches of this kind make corrections not just for technical differences among companies (e.g. number of customer connections or kilometers of pipeline) but also for other physical differences among companies (e.g. geographic characteristics, customer density, effects of urban versus rural environments, weather) as well.

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<sup>27</sup> If inflation indexing is to be used between periodic reviews, the terms used in the formulas given in the section “RAB-based methodology” have to be defined in real (constant price) terms so that in the periodic review, tariffs are fixed in real terms. Otherwise, there would be double counting of inflation. It is not the place of the present paper to elaborate on these details.

The key difference between international best practice in this area and what is practiced in Ukraine probably relates more to the rigidity of the starting estimates – whether determined by norms or benchmarking or some other technique.

Regulators often confront the problem of how to regulate tariffs for a company that is not performing well and is not taking sufficient steps to increase efficiency. A regulator could choose between two courses of action, broadly speaking:

- Set tariffs right away at the ultimate “efficient” level (based on norms) in the hope that that the company will undertake reforms and will become more efficient in the immediate future.
- Set tariffs at a level higher than the efficient level so that the company will have the cash to continue providing reasonably good services even if it means that customers will have to pay higher prices – but with a clearly specified “glidepath” towards the efficient level to create realistically achievable incentives for reform.<sup>28</sup>

Although the first course of action may be correct in an ideal world, the problem is that it will only work if the company does in fact rapidly undertake reforms and become more efficient. If not, the quantity and quality of services are likely to deteriorate because the company will be cash starved. That means that an important objective of utility regulation will not be met: the provision of good services to customers.

With respect to norms for heat and water losses, another weakness is that there appears to be no cost-benefit consideration used in regulatory practice in Ukraine for determining the levels of allowed losses. The formulas are engineering oriented. However, in determining the appropriate level of allowed losses, good international practice considers the trade-off between the cost of eliminating losses and the cost of leaving them as their present levels. In localities where pipeline replacement costs are very high and where water resources are abundant, for example, regulators generally tolerate higher levels of losses than in localities where replacement costs are lower or where water resources are more limited. For a single regulator overseeing multiple companies, it is not at all uncommon to see very different allowed loss levels for different companies due to this factor alone.

## **6.5 Clearer separation between the question of revenue requirement and the question of affordability**

Good tariff regulation makes a clear separation between (i) determining the revenue that would be needed by a reasonably efficient utility company to provide the required level of services on a sustainable basis, and (ii) determining how much of that revenue will be paid by customers – and by which classes of customers – and how much must be met by grants or subsidies. These are two entirely separate questions.

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<sup>28</sup> Regulators sometimes increase the stringency of an efficiency target over time, starting out with a target value (e.g. a cost or performance level) that may be close to the company’s present performance and ending up, after several years, with value appropriate for an “efficient operator.” This is often referred to as a “glidepath” since a graph of the target value plotted against time resembles the path of an airplane that is descending to land. This approach allows tariffs to change over a defined time period to a level that reflects the improved target values.

Regulatory systems sometimes mix and muddle these two questions. To minimize the need for external subsidies, such systems keep tariffs low by acting as if the companies' have lower needs for revenue. This is convenient politically because it often takes a long time for insufficient replacements and maintenance of the network to have a substantial impact on service quality – longer than the tenure of most politicians. This is a recurring problem in many countries, not just Ukraine.

At present, by law one function of the Commission in setting tariffs is to *balance interests*, and certainly there is a state interest in the affordability of tariffs. The Commission is heavily involved now in the assessment of affordability in order to make their case to the Ministry of Social Policy regarding needed state subsidies.

One way, however, to make a clear policy separation between these two different functions – a way that would send a sharp signal that they are in fact two different things – would be to emphasize in the law that the sole role of the regulator regarding tariffs is to determine the tariff level (or revenue requirement) that would permit a reasonably efficient utility company to deliver the required levels of service on a sustainable basis – and that the regulator must not give *any* consideration to questions of affordability in determining the *revenue requirement*. Then *another* department or agency (or at least another division of the regulatory entity) would be given the responsibility to determine if, and to what extent, grants or subsidies are needed. Of course, regardless of what is written on paper, a separation of functions like this will work only if there is clear political support for such a system.

## **6.6 Dealing with the workload in regulating municipal-level companies**

It is difficult to imagine a single regulatory office doing an adequate job regulating 268 district heating companies and 68 water companies without having a very large staff – much larger than could be imagined for the Commission. Either the regulatory methodology has to become much more light handed in nature, attempting only to correct for gross errors in the company's own projections, or the detailed work in regulatory reviews has to be delegated to regional or local bodies of some kind.

The Commission has recently set up nine territorial branches, with 87 staff members in these branches. It is likely that there will be further developments in this direction.

## **6.7 Other issues associated with regulation of the sectors**

The present paper has a limited focus – regulatory risk and its impact on PPPs – but it might be useful to list several broader reforms that could help create a more sound and predictable regulatory environment and therefore might have a positive impact on attracting private sector interest in the water, wastewater, and district heating sectors:

- *Commission involvement in systematically setting, monitoring, and enforcing service quality standards.* Service standards play an important role in incentive regulation. The ideal is to set strict targets for all the important service and other performance indicators,<sup>29</sup> and then give considerable freedom to the companies to achieve and sustain

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<sup>29</sup> Strictly speaking, “service indicators” relate to attributes that can be perceived directly by customers. Regulators often set targets for other aspects of performance, also – e.g. leakage targets.

these targets within the envelope of the allowed revenue. This would give communities more confidence that the profit motive of private sector operators will not result in deteriorating service quality.

- *Aggregating small service providers into larger entities to achieve better economies of scale.* This could create larger utility companies that would be more attractive to private investors and operators.
- *Incorporating mechanisms into the methodology that permit some customer-provided financing of investments.* The present methodology is based on a regulatory approach most appropriate for utility companies that have easy access to sufficient amounts of reasonably priced debt and equity financing from banks and the capital market. This is currently not the case in Ukraine. There are a number of different mechanisms used by regulators in other parts of the world that can advance revenue from customers. For example, in large construction projects, investments can be progressively added to the RAB even before the asset comes into operation.<sup>30</sup> Or customers can be required to make prepayments of revenue under certain circumstances. Sound accounting rules need to be adopted to handle these cases so that *customers* – and not the company’s shareholders – benefit over the long term from these advanced funds.
- *Creation of a comprehensive data base and system for the comparative analysis (benchmarking) of inputs, unit costs, levels of service, etc., based on all water, wastewater, and district heating companies in the country – and data from other countries as well.* Evidence-based benchmarking increases the predictability of regulation for investors and operators.

## 7. CONCLUSIONS

This paper has presented an overview of tariff regulation in the water, wastewater, and district heating sectors in Ukraine with a view to assessing the degree of regulatory risk.

It is difficult to escape the conclusion that, at present, regulatory risk is a significant obstacle to good-practice PPPs in these sectors in Ukraine. Even if the stated methodology and procedures of the National Communal Services Regulatory Commission conformed in every way to best practice (and in many ways, it appears that moves are being made in that direction), the Commission has no track record yet to give confidence to private sector companies.

The rating agency Standard & Poor’s made the following comment about the factors it takes into account in assessing regulatory risk in the water industry:<sup>31</sup>

The regulatory environment and industry structure in which a water [utility] operates are key rating considerations. [...] Standard & Poor’s analyzes the transparency of regulatory policies and the **length of time that the regulatory framework has been in place.** [...] Regulation in the water and wastewater sector in many emerging countries is newer than it is for the power

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<sup>30</sup> In the U.S., “construction work in progress” (CWIP); in the U.K., “assets in the course of construction” (AICC).

<sup>31</sup> Standard & Poor’s, “Water and Wastewater Utilities, Projects and Concessions,” *Infrastructure Finance* (Oct. 1999).

sector, and **untested**. To be viewed positively, regulatory treatment should be timely and allow **consistent, predictable performance** from period to period, given the importance of financial stability as a rating consideration. [*Emphasis added.*]

That is the crucial point: the system involving the new Commission is, as yet, largely untested. In fact, much is in the process of change now – and that itself presents considerable risk. Most high-quality private sector companies will want to wait a few years to see how the Commission adapts and performs.

Local private companies will probably continue to become involved in the sectors, but the non-transparent and maneuvering ways that most of them use to make ends meet – given the present system – is not a characteristic that goes well with best international practice for PPPs.

*It is therefore recommended that P3DP should wait some time before extending its support to the preparation of pilot PPP projects (covering entire utility systems) in the regulated sectors. Developments and growing practice in the regulation of these sectors should be closely watched.*

One exception might be if a project or set of projects were removed by law from the jurisdiction of the normal regulatory regime and made subject to a special regime of regulation that would be designed to test new features – an experimental regulatory regime. The kind of reforms that this would require would go beyond P3DP's mandate, but P3DP might be able to play a role, in the context of broader reforms led by other parties.

The one area in the regulated sectors where P3DP could become involved with pilot PPPs in the immediate future is PPPs for bulk water supply or for wastewater treatment. As noted in section 4.3, the prices charged by the PPP company to the utility company for these goods and services are not directly regulated. So long as (i) the municipality is willing to guarantee payment if the utility company cannot make a payment under the PPP contract and (ii) the municipality (or another guarantor) is considered to be creditworthy, then PPP arrangements of the build-operate-transfer (BOT)<sup>32</sup> type in the regulated sectors should be explored as possible candidates for pilot PPP projects.

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<sup>32</sup> These are sometimes referred to alternatively as *design-build-finance-operate* (DBFO) arrangements.

## ANNEX 1.

### SUMMARY OF THE KEY LEGISLATIVE PROVISIONS REGARDING TARIFF-SETTING

Title	Provisions
<p>“On State Regulation in the Sphere of Communal Services Market” (№ 3610-VI of July 7, 2011)</p>	<p>Sets the structure of the Commission, its function, rights and responsibilities.</p> <p>The National Commission of Communal Services Market Regulation of Ukraine is a central collegial body that performs state regulation in the sphere of heat energy production (except for entities that combine generation of heat energy and electricity and/or use alternative energy sources), transportation and supply, water supply and wastewater.</p>
<p>“On Natural Monopolies” (№ 1682-III of April 20, 2000)</p>	<p>Sets tariff-setting requirements for monopolistic entities. For tariff-setting purposes there can be recovered costs, profit, depreciation, investments. Only tax-deductible expenses can be recovered for regulatory purposes in tariffs.</p> <p>Defines that the national commissions form a system of state regulatory bodies for performing state regulatory function in the natural monopolies and adjacent markets.</p>
<p>“On Prices and Price Setting” (№ 507-XII of December 3, 1990)</p>	<p>Sets requirements for cost recovery of economically justified tariffs which are subject to state regulation.</p> <p>Defines that the governmental authority responsible for setting tariffs should reimburse the company for all the expenses caused by its decision to set tariffs at a level that is below the economically sound one.</p> <p>Defines types of tariff regulation methods.</p>
<p>“On Housing and Communal Services” (№ 1875- IV of June 24, 2004)</p>	<p><i>Sets powers for tariff-setting in housing and communal services sector.</i> Cabinet of Ministers of Ukraine is responsible for setting of the tariff-setting rules. National Commission: for setting tariffs for those companies which it licenses. Local self-governments: for setting tariffs to those companies which are not licensed by the National Commission. In addition, local self-governments set tariffs for non-licensed services (e.g. district heating, hot water supply to individual apartments in multi-apartment buildings).</p> <p>Local self-government bodies are to set prices/tariffs for housing and communal services not lower than economically grounded costs for their production.</p> <p>Setting prices/tariffs for services produced by the subjects of natural monopolies the regulation of activities is performed by the national commissions according to legislation. The powers of local self-government bodies cover only the tariff component that is not subject to establishment by the national commissions.</p> <p>In case when the local self-government body sets prices/tariffs for housing and communal services at a level that prevents the</p>

Title	Provisions
	<p>making of profit, the body that sets such tariffs has to compensate, from the local budget, the difference between the rate of prices/tariffs as set and economically grounded costs for production of these services.</p> <p><i>Sets principles of tariff-setting.</i></p>
<p>“On Drinking Water and Drinking Water Supply” (№ 2918-III January 10, 2002)</p>	<p>Defines that the Commission is the body of state regulation of subjects of natural monopolies and economic agents in adjacent markets in the sphere of water supply and wastewater pursuant to the Law of Ukraine “On Natural Monopolies”.</p>
<p>“On Heat Supply” (№ 2633-IV of June 02, 2005)</p>	<p>Defines powers of the Commission.</p> <p>Specifies powers of the Council of Ministers of the Autonomous Republic of Crimea, regional, Kyiv and Sevastopol city state administrations in the regulation of activity in the heat supply sphere as follows:</p> <ul style="list-style-type: none"> <li>— licensing of activity on production of heat energy (except heat energy production at CHPPs, atomic power plants and co-generation plants and/or use of non-traditional or renewable sources of energy), its transportation via local (distribution) heating networks, heat energy supply in amounts that do not exceed the level which is set in conditions and rules for performing economic activity (license conditions);</li> <li>— approval of tariffs for heat energy for the subjects of natural monopolies in the sphere of heat supply that are subject to licensing by them;</li> <li>— performing controls, within their competence, over adherence to license conditions.</li> </ul>