

**Ukraine:**

**Addressing Challenges in Provision of  
Heat, Water and Sanitation**

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## **Acknowledgments**

This report was prepared by Yuriy Myroshnychenko, Energy Operations Officer, from the Infrastructure Department, Europe and Central Asia Region, World Bank.

The report is based on information from official Ukrainian sources, including the Ministry of Architecture and Housing and Communal Services and State Statistics Committee. The report also draws on materials prepared to the World Bank by a group of consultants of the MDI, including Olga Romanyuk, Alyona Babak and Valentina Svyatotska, as well as a number of other consultants of the MDI. In addition, the report benefited from advise of and inputs from Andriy Mitskan of the USAID, consultants of the ASE Anatoliy Kopets and Stanislav Potapenko, individual consultant Rostislav Zhuk, President of association “Ukrteplocmunenergo” Leonid Pokrovsky, and Karsten Vesth-Hansen of the COWI consulting company.

The report also benefited from advise and direction given by Sumter Lee Travers, Infrastructure Sector Manager; Mark Davis, Senior Economist; Ellen Hamilton, Senior Urban Planner; Pekka Salminen, Senior Energy Specialist; Peter Johansen, Senior Energy Specialist; Dmytro Kryshchenko, Project Operations Officer; Dmytro Glazkov, Operations Analyst; Europe and Central Asia Region, World Bank.

## Acronyms and Abbreviations

ASE	Alliance to Save Energy
BOO	Build-Operate-Own Contract
CEO	Chief Executive Officer
CHP	Combined-Heat-and-Power
CPI	Consumer Price Index
ESCO	Energy Saving Company
GDP	Gross Domestic Product
HCS	Housing and Communal Services
HH	Household
HOA	Homeowner Association
IFI	International Financial Institution
MAB	Multi-Apartment Building
MDI	Municipal Development Institute
MIS	Management Information System
PSP	Private Sector Participation
ROT	Rehabilitate-Operate-Transfer Contract
SSN	Social Safety Net
USAID	United States Agency for International Development

## Preface

The performance of Ukraine's heat and water sectors and more broadly housing and communal services (HCS) has been steadily worsening since the early 1990s. The substantial depletion of sector assets has caused dramatic deterioration of sector services and adverse effects on the environment and safety. Moreover, huge receivables and payables accumulated by the sector have hindered reform efforts in adjacent sectors, particularly the energy sector. Further delay in sector reforms will undermine the economic growth of the country and living standards of the population.

This report examines major issues facing the heat and water sectors, considers options for addressing the issues, and provides recommendations on priority policy measures. The content of the report is meant to complement the previous analytical work on sector issues by other donors and to provide Ukrainian authorities with further recommendations on how to proceed with sector reforms.

The first chapter of the report assesses investment needs of the sectors and lists financing options to be developed for addressing the investment backlog accumulated by the sectors over the past decade. The first chapter also gives specific recommendations on how to create incentives for sector reforms. The other two chapters are dedicated to the main issues to be overcome if the sectors are to attract financing for meeting the investment needs. Specifically, the second chapter identifies major causes of the unviable operation of the sectors and develops recommendations on how to make the heat and water utilities financially viable. The third and last chapter highlights the importance of an effective regulatory framework for balancing interests of the sector stakeholders and provides recommendations for developers of the framework. Moreover, it stresses the need to improve the governance of sector utilities at a municipal level and presents some options on how to introduce principles of corporate governance in the management of utilities and take the advantage of various forms of the public private partnership. Each chapter is preceded by a summary highlighting major issues and required policy measures to address them. The executive summary identifies crosscutting issues and specifies conditions under which reform efforts could succeed.

## Executive Summary

1. At independence in 1991 Ukraine inherited extensively developed centralized heat and water<sup>1</sup> sectors, which served the tenants of multi-apartment buildings (MABs) accommodating about two-thirds of the country's population. Both service providers and MAB housing stock were owned and managed by the state. While the sectors were plagued with inefficiencies, the supply of heat and water was carried out relatively satisfactorily owing to sizable capital grants provided by the central budget, cheap energy resources, and weak environment protection policies.
2. The economic environment in which the sectors operated started to change shortly after independence. Ownership, governance, and regulation responsibilities for providing heat and water were transferred to municipalities. The transfer was accompanied by ceasing state capital grants, increasing energy prices, and abolishing the state vertical governance. Furthermore, the demand side of the market – MAB housing stock – also underwent changes, namely free-of-charge privatization of the housing stock to ex-tenants. From an institutional prospective, these changes have resulted in establishing hundreds of legal entities for providing water and heat services<sup>2</sup> and privatizing about 80 percent of the MAB housing stock.
3. Decentralization of heat and water sectors and privatization of MAB housing stock did not establish effective private ownership. Neither municipalities nor households living in MABs recognized that ownership implies financial and managerial responsibilities. Municipalities have kept tariffs for HCS<sup>3</sup> below cost-recovery levels without compensating for this in budgets and without conducting effective oversight of their heat and water utilities. Households have inconsistently paid for HCS and have abstained from managing MAB common property. These factors have caused the financial and technical distress of heat and water services and depletion of MAB housing stock. The result has been a significant deterioration in the reliability and quality of HCS.
4. If decentralized provision of heat and water services and more broadly HCS is to function satisfactorily, the sector stakeholders should recognize and fulfill their rights and responsibilities. There are four major stakeholder groups in provision of HCS. It includes central authorities, local authorities, service providers and intermediaries (Zheks), and end consumers. The four groups will benefit from sustainable operation of the HCS sector and improved level of HCS. However, it is critically important that all the groups fully assume their corresponding authorities and obligations.
5. The key role in leading sector reform agenda belongs to central authorities. Despite the decentralized responsibilities for providing HCS, the central authorities

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<sup>1</sup> The term “water sector” refers to water supply and sanitation throughout the report.

<sup>2</sup> As a rule, there is one heat utility and one water/sanitation utility per city/town.

<sup>3</sup> While the report is dedicated to the heat and water sectors, the term of housing communal services (HCS) is utilized when discussed issues are relevant to a range of HCS, including provision of heat and water.

should substantially increase their involvement in the sector. They need to focus their efforts on the following key actions:

- Devise a regulatory framework that delineates roles and responsibilities of the sector stakeholders, supports recovery of the sector, and balance interests of the stakeholders.
- Develop legislation for enforcing payment discipline and conducting restructuring of sector debts.
- Develop corporate governance tools adapted to municipal utilities in order to help municipalities effectively manage their utilities.
- Improve the efficiency of a social safety net in order to mitigate the impact of tariff increases on the poor.
- Provide methodological support and incentives to municipalities for preparing municipal/regional heat and water master plans.
- Develop a legal and institutional framework conducive to effective ownership and management of the MAB housing segment.
- Conduct nationwide public information campaigns for involving households in the sector reforms.
- Provide initial funding of sector investment needs in order to break the vicious circle that has been reducing sector performance for the past decade and catalyze sector reforms.

6. Local authorities also have a very important stake in improving sector performance. They need to support the reform measures initiated at the central level as well as execute their specific functions in provision of HCS. Specifically, the local authorities should assume the following responsibilities:

- Involve their respective communities in defining an affordable level of HCS.
- Establish sector utility tariffs at levels that allow the utilities to recover the recurrent costs and investments that are required for achieving the agreed level of HCS.
- Support utility efforts in collecting bills by conducting public information campaigns.
- Introduce principles of corporate governance in managing their utilities.
- Commission the preparation of municipal/regional heat and water master plans.
- Support development of effective ownership and management of the MAB housing segment.
- Promote participation of private sector in provision of HCS.

7. Finally, effective provision of HCS in a decentralized environment calls for an active participation of HCS consumers, and particularly households. On the one hand, they need to pay fully and on time for HCS and assume their ownership and management responsibilities with regard to the MAB housing stock. On the other hand, households should make their municipalities accountable for provision of HCS.

8. Understanding why municipalities and households neglected their ownership rights and responsibilities is critically important for creating incentives for and properly sequencing sector reforms. Abolished system of top-down control of the sector, which was aggravated by lack of sector skills at the local level, caused unsatisfactory governance and subsequently performance of sector utilities. The leadership of municipalities was inclined to keep tariffs low for political reasons and largely neglected long-term consequences of this policy. Households did not request that municipalities report on the performance of sector utilities because there was no tradition for top-down accountability. They abstained from managing the common property of MABs because of their historic reliance on the state for managing the MAB housing stock and inconsistently paid for HCS because of the lack of payment enforcement mechanisms.

9. The central government could promote sector reforms by providing incentives to local authorities and households via a pooled financing mechanism. The immediate investment needs of the heat and water sectors are estimated at US\$12 billion through 2012. Significant commercial borrowing for meeting the investment needs will not be available until the sectors demonstrate good progress toward viability and creditworthiness. In the meantime, state support remains the only solid source of financing sector investment needs. However, state financing should preferentially be offered to the cities that meet reform-linked eligibility criteria. Structuring the support around a pooled, nationwide financing facility that would provide preferential loans to cities for reform outputs and regularly informing the population through public information campaigns about progress of reform champions would create a competition for funds among cities and promote sector reforms.

10. However, if state funding is to be effective it should not substitute for the need to remove barriers that hinder investments in the sectors even though they make both economic and financial sense. These barriers include poor governance of heat and water utilities, reluctance to accept paying full price for utilities services in the general public, lack of experience with and knowledge of best practice, short-term focus at national and local government level, poor investment framework due to lack of trust-worthy regulation and rule-of-law.

11. Another important condition for successfully conducting reforms is to synchronize efforts in the supply and demand sides of the HCS market. Reform progress on the supply side of the market largely depends on whether market arrangements are in place on the demand side. Effective ownership and management of MABs is a must both for achieving financial viability of service providers and providing incentives to the providers to reduce costs and become more efficient. However, the financial and technical recovery of service providers from their post-independence decline also is

necessary if households are to benefit from improved management of MAB common property. Therefore, a sector reform agenda will need to include policy measures that address issues facing both service providers and consumers, in particular the MAB housing segment.

## Chapter I. Meeting Investment Needs

### Summary

I-i. Meeting investment needs is the most difficult challenge facing the heat and water sectors in Ukraine. Key issues include the following:

- A huge investment backlog has been accumulated that exceeds 15 percent GDP and was several times higher than annual revenues of the heat and water sectors in the past years.
- Immediate investment needs through 2012 are estimated at US\$12 billion.
- The chronic loss-making operation of sector utilities has engendered a vicious circle: depleted assets lead to poor services, which leads to low revenue and further depletion of assets. This circle makes the sectors unattractive for private capital.
- Public funds to offset the unviable financial operation of the sectors have been unavailable.

I-ii. Financial viability of the sectors is the most important condition for meeting the investment needs. There are only two ultimate sources of financing for investment needs, namely user fees and budget subsidies (capital grants). Financing investment through user fees is more appropriate because adequate tariffs and the need to fully pay for services send the right economic signal to consumers. When consumers are accustomed to paying for their services, utilities will have predictable resources and incentives to improve efficiency (if an effective oversight system is in place).

I-iii. Using budget subsidies to compensate for loss-making tariffs and poor collections is inefficient. The main deficiencies of this arrangement include lack of incentives for utilities to improve their performance, so the need for subsidies is perpetuated; lack of incentives on the demand side to consume resources sparingly because of low tariffs; and social inequity because increased taxes and/or reduced social spending are likely to hit the poor. Therefore, financing of recurrent and investment costs should be premised on financial viability of utilities. Financial viability is also a precondition for securing commercial borrowing, which allows utilities to balance large upfront investments with an affordable pace of tariff increase.

I-iv. Borrowing of public funds at preferential rates is the only realistic option for sustainable financing of sector investment needs in the short term. Because the sectors are chronically loss-making, commercial borrowing is nearly unavailable at present even if instruments to promote commercial borrowing are available<sup>4</sup>. If the sectors are to attract

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<sup>4</sup> For instance, the USAID developed two projects in support of commercial borrowing by municipalities and their utilities. One project aims to mobilize local private capital by providing a

private capital they need to demonstrate convincing progress towards viability and creditworthiness. Under the current circumstances, the credit history that is required by private financiers can be built only by borrowing public funds. The funds could be lent at a subsidized rate in order to make the pace of tariff increase affordable, but this still will require tariffs and collections at the levels sufficient to recover both recurrent cost of operation and debt servicing.

I-v. Central budget support to the sectors has been marginal so far and provided on an ad hoc basis.<sup>5</sup> The use of public funds should be substantially increased but properly managed in order to ensure their effectiveness.

I-vi. Developing public financing around national or regional pooled financing facilities could be instrumental for both meeting initial investment needs and promoting sector reforms. Reforms could be catalyzed by linking them to eligibility for funding, thus creating competition for facility funds among municipalities and utilities. This arrangement would need to be further strengthened by a nationwide public-awareness campaign that would help create a bottom-up demand for better HCS. However, if public financing is to be effective it should not substitute for the need to remove barriers that hinder investments in the sectors even though they make both economic and financial sense. Moreover, financing should be preferentially provided to the municipalities that developed heat and water sector master plans.

I-vii. Additional priority measures should include promoting the energy saving company (ESCO) concept and exploiting the exceptional opportunities stemming from Kyoto Protocol financing mechanisms. The ESCO concept provides a unique opportunity to attract private financing in loss-making sectors by implementing energy efficiency projects and paying back upfront investments through monetized energy savings. The concept is known in Ukraine, but has been only marginally exploited because of cheap energy prices, lack of incentives in the demand side, and barriers to private sector participation. Recent substantial increase in the price of natural gas provides an impetus for implementing energy efficiency projects. However, if the energy saving potential in the HCS sector is to be fully realized, efforts should be made to create incentives in the demand side and strengthen the supply side of the market. The Kyoto Protocol financing mechanisms allow Ukraine to attract grant financing to the sector. However, in order to enjoy this exceptional opportunity, Ukraine will need to meet the Protocol eligibility criteria by January 1, 2007.

I-viii. Medium-term actions will need to address technical barriers preventing the sectors from accessing commercial borrowing and attracting private operators through

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partial credit guarantee to eligible Ukrainian banks that lend to municipalities or their utilities. The other project provides a technical support to municipalities in placing bonds. While both instruments were available for more than one year, they did not catalyze private funds to the heat and water sectors.

<sup>5</sup> The central and local budget subsidies in 2004 to the water sector were UAH 243.5 million (US\$45.9 million) and UAH 16.3 million (US\$3.1 million) respectively, and to the heat sector, UAH 46.9 million (US\$8.8 million) and UAH 4.7 million (US\$0.9 million) respectively.

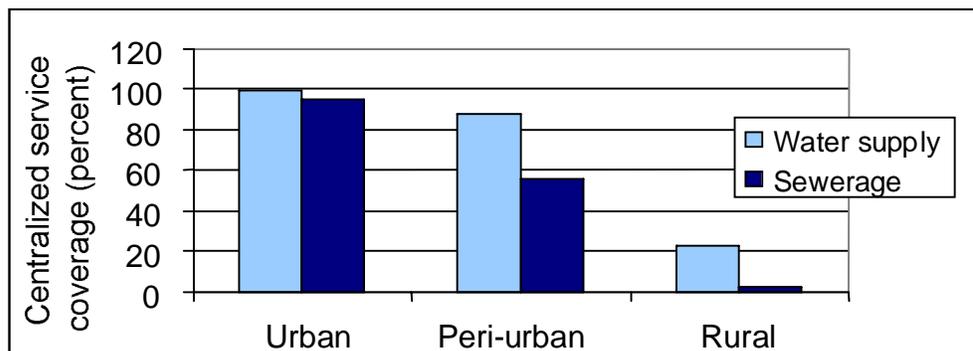
concession agreements.<sup>6</sup> As the heat and water sectors approach creditworthiness, they will have increased opportunities to take loans, place bonds, and conclude concession agreements. Additional financial resources that could be secured through these measures will be urgently required in order to expand investment programs supported in the short term by public funds, ESCO financing, and Kyoto Protocol mechanisms. Exploiting all these financing options will be critical for meeting the huge investment needs of the sectors.

## Heat and Water Sector Investment Needs through 2012

I-1. The priority rehabilitation needs of the heat sector are estimated to be about US 5 billion and the investment needs of the water sector are estimated at US\$ 7 billion for the period 2006–2012. Sector assets have been depleted significantly since the early 1990s because of years of neglect and underinvestment. Moreover, the sector equipment in use is highly energy intensive and oversized because of low energy prices and irrational consumption during the Soviet era; therefore it requires modernization.

I-2. If sector investment programs had included comprehensive rehabilitation needs and expansion requirements (the latter is especially valid for sewerage and water supplies as indicated in figure I-1) in order to approach EU standards, the need for financing would be much larger.

**Figure I-1**  
**Coverage of Centralized Water and Sanitation in Urban, Peri-Urban and Rural Settlements**



Source: Ministry of Architecture and HCS.

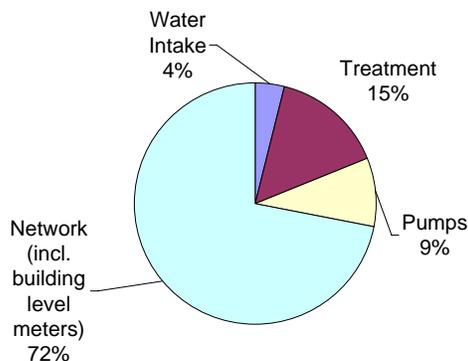
### *Water Supply and Sanitation Sector Immediate Investment Needs*

I-3. Priority rehabilitation needs of the water supply and sanitation sector will cost an estimated US\$7 billion through 2012. Investments in the water supply account for about 60 percent of this amount and the remainder will fund the rehabilitation of sanitation systems. The investments in water supply are essentially aimed at (i) curtailing electricity

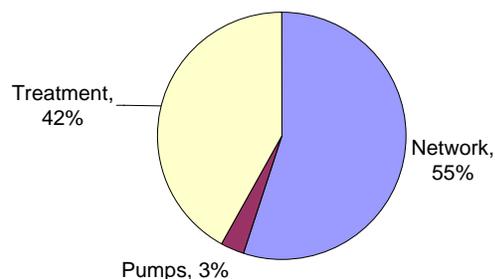
<sup>6</sup> Concession is a long-term lease of state or municipally-owned assets by a private operator, which includes investment obligations of the private operator.

consumption, (ii) reducing technical and commercial losses, and (iii) bringing water quality up to healthy standards. The rehabilitation of sanitation systems is intended to curb environmental externalities and reduce electricity consumption. Priority should be given to the investments that have the highest energy saving potential (such as pumping modernization) and to those that support commercialization of water sector utilities encourage rational consumption of resources (such as meters). The breakdown of investment in the water supply and sanitation subsectors is shown in figures I-2 and I-3.

**Figure I-2**  
**Composition of Water Supply Sector**  
**Immediate Rehabilitation Needs**  
**Total US\$ 4.2 billion**



**Figure I-3**  
**Composition of Sanitation Sector**  
**Immediate Rehabilitation Needs**  
**Total US\$ 2.8 billion**



*Source:* Materials produced by the Municipal Development Institute to the World Bank; Ukraine National Water Sector Strategy prepared by the COWI consulting company; World Bank assessment.

#### *Heating Sector Immediate Investment Needs*

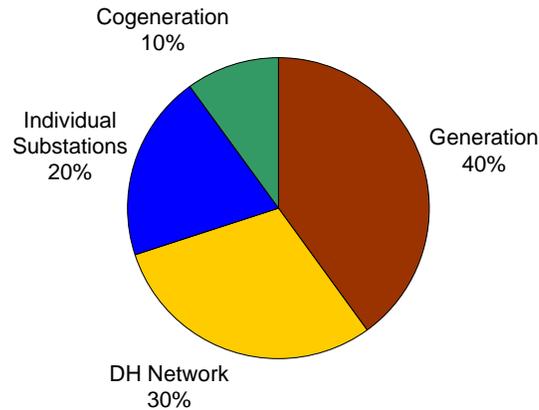
I-4. Heating sector investment needs through 2012 will cost an estimated US\$5 billion<sup>7</sup>. This amount covers wide-scale replacement of heat group substations with building level (individual) substations, rehabilitation of heat generation sources, partial replacement of district heating networks, and construction of CHPs and cogeneration units at HOBs. The breakdown of investment items is shown in figure I-4. Investments in individual heat substations should be prioritized because they will yield significant energy savings<sup>8</sup> and promote commercialization of heat utilities and development of demand-driven heat market.

**Figure I-4**

<sup>7</sup> Assuming that it is economic to keep the district heating arrangement (vs decentralized heat supply option) in most of the cities.

<sup>8</sup> Replacing group heat substations with individual substations across Ukraine would result in savings of about 2 billion of cubic meters of natural gas per year.

## Composition of Heat Sector Immediate Rehabilitation Needs Total US\$ 5 billion



*Source:* Materials produced by the Municipal Development Institute to the World Bank; World Bank assessment.

I-5. Investments in energy efficiency retrofitting of buildings are equally important. Public buildings and MABs waste large amounts of heat through a poor insulation of windows, doors, and walls. Adjusted heat prices together with meter-based heat bills would provide incentives to building owners to invest in energy efficiency measures (such as weather-stripping, radiator reflectors, replacement of windows, and so forth), and as such, will reduce energy waste on the demand side of the heat market and optimize investments in the supply side of the market.

### Priority Measures for Securing Financing

I-6. The use of public funds, ESCO contracting, and Kyoto Protocol financing mechanisms should be promoted for addressing heat and water sector investments in the short term. Annual investment needs of the heat and water sectors exceed their respective annual revenues. Financing of the needs, while keeping the pace of tariff increases affordable, requires the use of external financial resources. However, the heat and water sectors currently are unviable, and therefore, they have access only to a very limited set of options for attracting external financing. It includes public funds, private capital through ESCO contracting, and potentially grants from Kyoto Protocol financing mechanisms. The following section reviews these three options and provides recommendations on how to enhance their use.

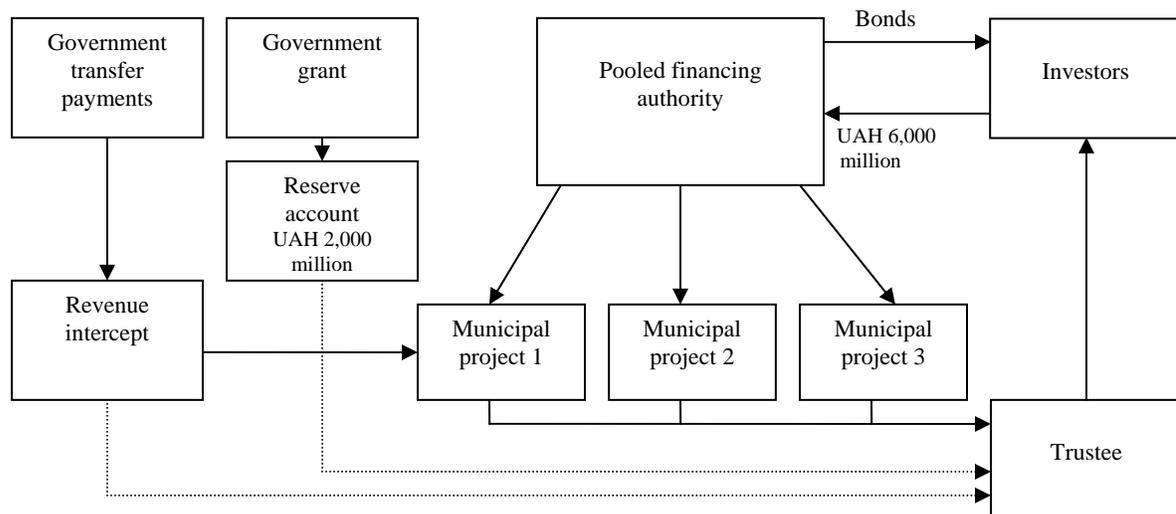
#### *Public Funds*

I-7. A significant increase in public spending is required in the short term. Because the sectors are chronically loss-making, commercial borrowing is mostly unavailable at present. If the sectors are to attract private capital and enlarge access to funding from

international financing institutions (IFIs) they need to demonstrate solid progress towards viability and creditworthiness. Under the current circumstances, initial financing and building a good credit history can be done only by borrowing public funds. The funds could be lent by the central government at a preferential rate in order to make the pace of tariff adjustment affordable. However, it is essential that under this arrangement tariffs recover both recurrent costs and debt servicing and that full collections of tariffs are made.

I-8. Arranging public financing in the form of a pooled financing facility could ensure the effective use of funds. Pooled financing facilities have been successfully employed in a number of countries, including transition economies.<sup>9</sup> The facilities are usually built around a revolving fund or bond bank at the national or subnational level. The funds are initially financed by government and also could be supported by IFIs. In the case of simple revolving fund the pooled funds are directly lent to municipalities and their utilities. The bond bank option uses government/ IFIs contributions as collateral for securing private capital through placing bonds. The collateral serves to protect investors, who buy bonds issued by the pooled financing facility, from a failure of local projects. The central government may protect itself from eventual abuse by local governments by retaining equalization budget transfers or any other appropriate mechanisms. A possible structure of the pooled financing facility in the form of a bond bank at the national level is presented in figure I-5.

**Figure I-5**  
**Pooled Financing Facility in the Form of a Bond Bank**



<sup>9</sup> For further information on pooled financing facilities, including international experiences with various models, refer to the “Concept Paper: Introduction to Pooled Financing” developed by USAID under the Infrastructure Reform and Finance Project. The paper as well as additional materials on this subject could be obtained at the USAID office in Kyiv ([www.usaid.kiev.ua/](http://www.usaid.kiev.ua/)).

I-9. Pooled financing facilities have a number of benefits:

- *They provide improved market access*, since they provide access to private capital markets for municipalities and utilities lacking financial knowledge, history, and scale.
- *They lower transaction costs*, since pooling a number of smaller projects spreads the costs among the projects and thus reduces the transaction costs for municipalities and utilities.
- *They lower borrowing costs*, since a national or subnational pooled financing authority, backed by reserve account funds, can place bonds yielding a lower return than those placed by individual municipalities or utilities.
- *They leverage public funds (for the facility in a form of bond bank)*, since government funds, which are retained as collateral in reserve account, usually allow the facility to place bonds in the amount that exceeds about three times the amount of reserve account.

I-10. Besides all the technical and financial advantages, the pooled financed facility could be also instrumental in catalyzing reforms in the HCS sector, for example by establish reform-linked eligibility criteria for municipalities and utilities. Municipalities and their utilities that meet eligibility criteria will have access to facility funds, and as such, will be rewarded for reform outputs. Eligibility criteria may include cost-recovery tariffs, full collections, higher efficiency, and so forth.

I-11. Further more, public funds should be preferentially provided the municipalities that developed heat and water sector master plans. These plans would need to include i) status with a baseline scenario, ii) target setting based on comparison with best practice, iii) economical and financial analysis of options, iv) proposed investment program, v) action plan for first years. The plans should also look into possibilities of spinning off potentially attractive activities (such as heat generation, water intake, and so forth) as well as comparing options of centralized versus decentralized provision of services (for heat provision).

I-12. Sector reforms can be promoted with a pooled financing facility in Ukraine because the market is large enough, and a number of cities have demonstrated good progress in resolving HCS sector issues. The hundreds of utilities and municipalities in Ukraine form an excellent competitive environment for deploying the pooled financing model at the national or even regional level. Some municipalities have made progress in adjusting heat and water utility tariffs toward cost-recovery levels, helped their utilities through public information campaigns to raise collections, and introduced elements of good governance to increase operational efficiency of utilities. These municipalities will be first beneficiaries of the pooled facility resources. They will set performance benchmarks and demonstrate that HCS sector reform is feasible and financially supported by the government. This would create a competitive environment for funds and, as such, promote sector-wide reforms.

I-13. A strong nationwide public information campaign will be required to support reform built around the pooled financial facility. The campaign should address the major consumers of HCS—households—and will need to focus on two aspects pertaining to the role of households in sector recovery. First, households must understand that cost-recovery tariffs and full payment are the most important preconditions for HCS improvement. Such understanding will help to get the buy-in of households for badly needed tariff increase and full collections.

I-14. Second, the population must be regularly informed about the progress of municipalities that act as reform “champions”. The success of reform champions in obtaining facility funds and improving HCS levels would help to introduce a bottom-up demand for better HCS, which in turn would encourage municipal authorities to pay attention to HCS matters and make them accountable for HCS decisions. The improvement and affordability of HCS has been and will remain one of the most important issues in local politics and elections. In the past, however, the issue of affordability has been exaggerated at the expense of improvement. A public information campaign could stimulate demand of informed voters for better HCS services and thus could help rectify the policy bias of municipal authorities for affordability. Informed customers would give municipalities stronger incentives to conduct regulation, oversight, and delegated ownership duties in a way beneficial to the long-term interests of their electorate.

I-15. However, if state financing is to be effective it should not substitute for the need to remove barriers that hinder investments in the sectors even though they make both economic and financial sense. These barriers include poor governance of heat and water utilities, reluctance to accept paying full price for utilities services in the general public, lack of experience with and knowledge of best practice, short-term focus at national and local government level, poor investment framework due to lack of trust-worthy regulation and rule-of-law.

### *The ESCO Concept*

I-16. The energy saving company (ESCO) concept, also known as performance contracting, is a unique way of attracting private capital into loss-making sectors. It works by procuring private investment to implement viable energy efficiency projects, and then paying back the investors from energy savings generated by the projects. The limited access of the HCS sector to commercial borrowing and the huge potential for energy savings makes the ESCO concept a very attractive option for financing sector investment needs.

I-17. The ESCO concept is known in Ukraine but has been only marginally exploited because of cheap energy prices, lack of incentives on the demand side, and barriers to private sector participation. Recent substantial increase in the price of natural gas provides an impetus for implementing energy efficiency projects. However, if the energy saving potential in the HCS sector is to be fully realized, efforts should be made to create incentives in the demand side and strengthen the supply side of the market.

I-18. It is highly recommended that ESCO be promoted generally in Ukraine. In particular, ESCO should substantially enlarge its application in the water and heat sectors. Realizing the potential of performance contracting will require the following measures:<sup>10</sup>

- Introduce accounting rules that permit the accumulation of monetized energy savings in an escrow account and ensure prerogative access to the account by a financier (ESCO, commercial bank, or energy efficiency fund).
- Replace the cost-plus tariff methodology with an incentive regulation or allow utilities to include in the tariff an energy conservation surcharge to motivate the implementation of energy conservation projects. Moreover, utility staff contributing to reduction of energy consumption should be remunerated.
- Promote the supply side of the market by establishing energy efficiency funds that facilitate upfront financing of energy conservation projects.

#### *Kyoto Protocol Financing Mechanisms*

I-19. The Kyoto Protocol financial mechanisms could provide grants for energy efficiency projects in the heat and water sectors because such projects reduce greenhouse gas emissions. Ukraine's potential earnings from trading emission reduction credits under the Kyoto Protocol total several billion U.S. dollars. However, worldwide, the supply of emission reduction credits is likely to be significantly higher than demand. The oversupply of emission reduction credits stems from the decline of economic activity in transitional economies compared to the 1990 baseline year and the implementation of emission reduction projects. The demand for credits is driven by developed countries participating in the Kyoto Protocol and having emissions in excess of target levels.

I-20. Timely compliance with Kyoto Protocol eligibility criteria is critical if Ukraine is to benefit from this exceptional time-limited financial resource. Most potential buyers have already indicated their preference to purchase emission surplus credits from the countries that will invest ("green") credit revenues in emission reductions projects and that overall meet the eligibility criteria imposed by the Kyoto Protocol. Moreover, the window of opportunity for emission transactions scheduled for 2008–12 is rapidly closing and there is uncertainty about further trading opportunities after that time frame. Therefore, the Ukrainian government needs to promptly mobilize efforts to meet the January 1, 2007 deadline for compliance with conditions required for participating in the Kyoto financial mechanisms. Furthermore Ukraine needs to set up institutions that connect individual projects with wholesale funds generated by Ukraine from emission

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<sup>10</sup> For further information on the barriers to ESCO application in Ukraine, as well as on experience with implementing ESCO projects, contact the project team of the UkrESCO project financed by the EBRD ([www.ukresco.com](http://www.ukresco.com)).

surplus sales in international markets<sup>11</sup> and make municipalities and their water and heat utilities aware of this financial resource.

### Medium-term Measures to Secure Financing

I-21. Medium-term actions should aim to remove barriers preventing the heat and water sectors from accessing commercial borrowing and attract private operators through concession agreements. As long as sectors approach creditworthy status they will have increased opportunities to take loans, place bonds, and conclude concession agreements. All of these resources will be required to expand significantly investment programs supported in the short term by public funds, ESCO financing, and revenues from emission trading under the Kyoto Protocol.

#### *Commercial Borrowing*

I-22. Commercial borrowing for financing investment needs has been barely available so far because sector utilities have not been creditworthy. Utilities have secured only short-term loans<sup>12</sup> aimed essentially to honor their immediate financial obligations (such as operation and maintenance costs and taxes). As a rule, funds have been lent exclusively by local banks that service the utilities and have control over their financial flows. Borrowing from nonlocal banks has been impeded by insolvency of the utilities and lack of collateral. Funds raised by municipalities through commercial loans and bonds were largely used for other municipal needs than heat, water supply, and sanitation.

I-23. Besides the fundamental barriers to commercial borrowing—insolvency of utilities and deficient and unpredictable regulatory framework—there are issues of technical nature that need to be addressed before municipalities and utilities can take loans or place bonds. Problems and recommendations on how to address them are summed up in table I-1.

**Table I-1**  
**Technical Issues Facing Borrowing at Municipal and Utility Levels**

Problems	Recommendations
<i>Common problems of municipalities and utilities</i>	
Debt financing is unavailable in maturities or at rates rendering tariffs affordable.	<ul style="list-style-type: none"> <li>- Further promote the development of local capital markets.</li> <li>- Use central budget subsidies for the HCS sector to compensate for interest rates and/or extend maturity.</li> </ul>

<sup>11</sup> The comprehensive list and description of the Kyoto eligibility criteria and required actions to meet them are included in materials presented by the World Bank at the Workshop on the Kyoto Protocol, which was held in Kyiv on June 6–7, 2005.

<sup>12</sup> There was just one bond issue by utilities early in 2005: the Kherson Heating Company placed a six-month bond issue worth UAH 2.5 million (about US\$ 470,000).

	<ul style="list-style-type: none"> <li>- Issue partial risk guarantees for local commercial banks lending to the HCS sector.<sup>a</sup></li> <li>- Develop pooled financing facilities.</li> </ul>
There is a limited set of liquid assets that can be used as collateral for loans.	<ul style="list-style-type: none"> <li>- Clarify ownership of the assets by local/municipal governments.</li> <li>- Examine options of setting up a special fund at the central government level for guaranteeing loans to heat and water utilities.</li> <li>- Consider using the future revenues of municipalities and utilities as collateral.</li> </ul>
<p>Skills and experience are lacking for the following tasks:</p> <ul style="list-style-type: none"> <li>- preparing feasibility studies and justifying the economic effect of investment programs as required by banks and investors</li> <li>- securing commercial loans and issuing bonds</li> </ul>	<ul style="list-style-type: none"> <li>- Establish proper compensation packages to retain and attract key specialists to heat and water utilities.</li> <li>- Organize trainings and seminars.</li> <li>- Make active use of the available technical assistance.<sup>b</sup></li> <li>- Support the establishment of local consulting companies specializing in the HCS sector.</li> </ul>
The local market of rating services is underdeveloped and the available rating agencies are expensive.	Promote the development of the rating services market.
<i>Municipality specific problems</i>	
<p>The Budget Codex is not complemented by legislation on municipal borrowing and guarantees. Moreover, it stipulates that international borrowing is available only for cities above 800,000 inhabitants (that is only 5 out 455 cities can borrow).</p> <p>-</p>	<ul style="list-style-type: none"> <li>- Pass legislation on municipal borrowings and guarantees.</li> <li>- Examine the appropriateness of widening the eligibility criteria for international borrowing (subject to city budget viability and international investor interest in lending to cities below 800,000 inhabitants).</li> <li>- Consider increasing the share of taxes kept at municipal level.</li> </ul>
Borrowing is hampered by the complex procedures of the Ministry of Finance and State Commission for securities and stock exchange transactions.	Streamline the procedures.
<i>Utility specific problems</i>	
Utilities have a history of chronic financial insolvency.	Make the utilities financially viable as recommended in chapter II of this report.

*Source:* Materials produced by the Municipal Development Institute to the World Bank; World Bank analysis.

- a. One such risk mitigation instrument was offered by USAID in the framework of the Development Credit Authority in fall 2004. It aims to mobilize local private capital by providing a partial credit guarantee to eligible Ukrainian banks that lend to municipalities or their utilities. The guarantee agreements with the banks are designed for five years and cover 50 percent of the loan amount provided to municipality or utility. Further information on this subject can be obtained at the USAID office in Kyiv ([www.usaid.kiev.ua/](http://www.usaid.kiev.ua/)).
- b. Such technical assistance includes the USAID-funded Municipal Bond Program, carried out by the Pragma Corporation (<http://www.pragmacorp.com/>), and the Tariff Reforms and Communal Service Enterprise Restructuring Project, carried out by the Planning and Development Collaborative International (PADCO) (<http://www.padco.aecom.com/>).

### *Private Sector Participation*

I-24. Private operators have not invested in the water and heat sectors. Private sector participation in Ukraine's water and heat sectors has been limited to a few leases and concessions by local operators and has not had a material impact on the financing of investment needs. Most of the lease and concession agreements were concluded in a nontransparent manner and without clearly defined and legally binding investment obligations of private operators.<sup>13</sup>

I-25. Immediate prospects of attracting investments in the water and heat sectors in Ukraine through concession agreements are weak. The main causes hindering private sector participation are as follows:

- The utilities are chronic loss-making operations, and there is a lack of commitment by central and local authorities to establishing legal and regulatory framework conducive to sound operation of the sectors.
- Regulation is inconsistent and there is lack of transparency and perceived risk of political pressure on tariffs in the course of concession term.
- Capital intensity with high upfront investments is exacerbated by long payback periods and low sector returns.

I-26. The priority actions for attracting solid private sector operators through concession should include the financial recovery of sector utilities, establishment of a stable and predictable regulatory framework, and further development of a legal framework for concessions.

I-27. Provided that the issues outlined above are addressed in the medium term, Ukraine's heat and water sectors could benefit from the expertise, experience, and capital of private operators. Reliable private operators are usually interested in concession agreements with big companies. Therefore this option will be mainly available for relatively large utilities, that is, those located in oblast centers or aggregated utilities combining several medium-sized providers.

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<sup>13</sup> For example, the concession of Odessa Vodokanal, as well as lease agreements for CHPs in Chernigiv and some other cities.

I-28. Risk mitigation instruments can help address some of the issues listed above in order to make the heat and water sectors more attractive to the private sector. The risks that can be mitigated include those of a noncommercial nature and are usually associated with legal, contractual, regulatory, and policy uncertainties facing lenders and private equity sponsors.

I-29. However, risk mitigation instruments cannot replace the need to improve the legal and regulatory framework and devise and implement policies conducive to sustainable operation of the sectors. Rather, these measures are urgently needed to first attract the private sector and then, once private sector arrangements are in place, to protect interests of the sector stakeholders.

## Chapter II. Restoring Financial Viability

### Summary

II-i. Restoring the financial viability of the heat and water sectors is a key factor in breaking the vicious circle that has been reducing sector performance for the past decade. Sustainable financial operation of the sectors is badly required because public funds can not and should not compensate for the sector financial losses. Moreover, financial recovery needs to proceed promptly because delays will cause further deterioration of sector physical assets. This in turn will increase sector investment needs, requiring drastic tariff hikes. If further postponed, the necessary tariff adjustments will become unaffordable and this may stall sector recovery.

II-ii. There is a set of intertwined systemic issues associated with the financial distress of the heat and water sectors:

- loss-making tariffs
- nonpayment
- commercial losses and unaccounted technical losses
- excessive payables and receivables
- inefficient operation of utilities

II-iii. Of the issues listed above, priority should be assigned to tariff realignment and full collections. Progress on these two items can be achieved relatively promptly and will help address the other three issues that require more time for resolution.

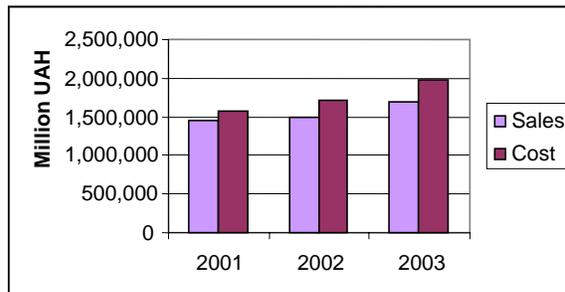
II-iv. Financial recovery requires the concerted efforts of central authorities, local governments, utilities, and consumers (mainly households). Despite the decentralized provision of heat and water, central authorities have to play a key role in making the sector viable. The authorities should devise the regulatory framework for realigning tariffs; pass the legislation for enforcing payment discipline; develop the legal framework for and promoting restructuring of sector debts; raise awareness of households about the need to increase tariffs and fully pay for the heat and water services; and improve the efficiency of the social safety net in order to mitigate the impact of tariff increases on the poor.

II-v. The other sector stakeholders—local authorities, utilities, and households—also should fully assume their respective rights and obligations in order to bring the sectors to sustainable operation. Local authorities should raise tariffs of utilities to cost-recovery levels, help utilities to fully collect payments, and introduce corporate governance principles in management of utilities. Households should pay fully and on time for HCS and assume their ownership and management responsibilities with regard to the MAB housing stock. On the other hand, households should make their municipalities accountable for provision of HCS.

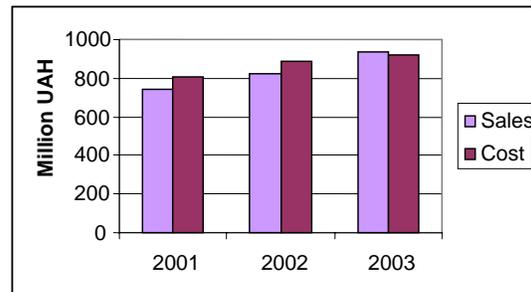
## Loss-making Tariffs

II-1. Chronic loss-making tariffs are the most acute problem of the heat and water utilities. The tariffs have been below recurrent, let alone full, costs over the past decade (see figures II-1, II-2, and II-3). This has caused persistent financial losses and deprived the utilities of resources needed to adequately finance operation, management, and rehabilitation needs. This in turn has led to deterioration in the reliability and quality of services and in many cases to abolishment of services (for example, hot water is no longer available in a number of Ukrainian cities). The major reason for keeping tariffs below cost recovery is that short term political imperatives of local authorities, which regulate the heat and water sectors, in practice prevail over the economic rational. If the services provided by heat and water utilities are to be sustained and improved, the tariff setting should be based on economics and not on politics.

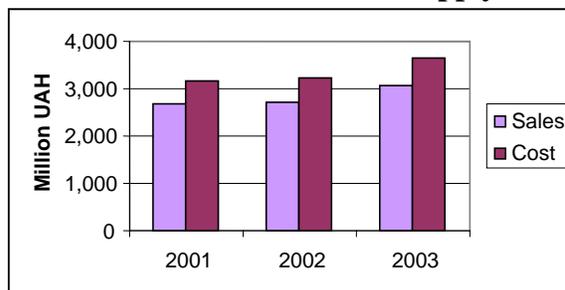
**Figure II-1**  
**Billed Sales versus Recurrent Cost**  
**of Water Supply**



**Figure II-2**  
**Billed Sales versus Recurrent Cost**  
**of Sanitation**



**Figure II-3**  
**Billed Sales versus Recurrent Cost**  
**of Heat and Hot Water Supply**



Source: Ministry of Architecture and HCS.

II-2. Besides adjusting tariffs to cost-recovery levels, rules and orders for calculating heat and water/sanitation tariffs need to be further developed and, once approved, strictly applied by regulatory bodies. While there has been progress in developing and approving the rules and orders, significant gaps remain. Specifically, there is a need to complement or develop orders and guidelines for computing one- and two-tier tariffs and to allow the inclusion of investment components in tariffs. Moreover, the main items of production cost—energy and labor—should be timely indexed within the tariffs by streamlined and uncontested procedures.

II-3. Revaluating the fixed assets of utilities and allowing increased depreciation charges are equally important steps for realigning tariffs. The fixed assets of heat and water utilities, similar to the other energy and infrastructure sectors in Ukraine, are significantly undervalued. Inadequate depreciation charges, which are below true replacement costs, result in providing economic subsidies from the sectors to end consumers. Utilities are reluctant to revalue assets for two major reasons. First, revaluing is penalized by tax legislation, which considers an increase of asset value as a profit and taxes it. Second, regulatory bodies are reluctant to reflect the full value of assets in tariffs because it would lead to tariff hikes. The first cause should be addressed by amending the tax legislation in order to exempt asset revaluation. Resolving the second problem requires an improved regulatory framework. An alternative to revaluating fixed assets would be the approval of medium-term investment programs for utilities and introduction of tax-deductible investment surcharges for utility tariffs.

II-4. Tariff misbalancing between households and industrial customers is another deficiency of the present tariff arrangement. Household tariffs are significantly lower than industrial tariffs but the cost of servicing households is higher. Misbalancing is especially pronounced in the water sector where the ratio of industrial to household tariffs reaches a factor of 10 in some cases. The misbalancing has a number of negative consequences. One consequence is depressed tariffs that do not provide incentives to households to consume resources rationally.<sup>14</sup> Another consequence is inflated industrial tariffs that make it economically attractive for industries to disconnect from centralized supply and invest in their own production of heat and water. The tariff misbalancing should be eliminated by raising household tariffs to cost-recovery levels and mitigating adverse impacts on the poor by improving the efficiency of the social safety net.

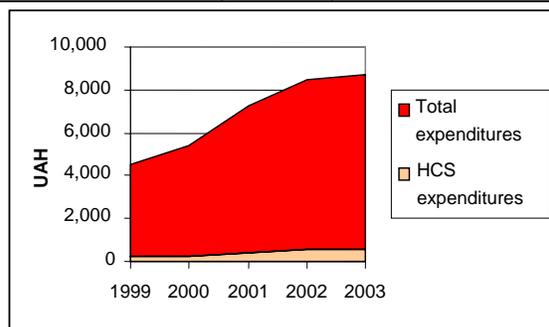
II-5. The widespread concerns about the inability of households to afford cost-recovery tariffs are not justified by facts. Actually, the sustained economic growth in Ukraine over the last six years has boosted the welfare of households. The revenues and expenditures of households nearly doubled and outstripped the growth of HCS expenditure from 1999 to 2003 (figure II-4). As a result, the number of households eligible for housing allowances was halved from about 5 million in 1999 to 2.5 million in 2003 (figure II-5), and this trend continued in 2004 and 2005<sup>15</sup>.

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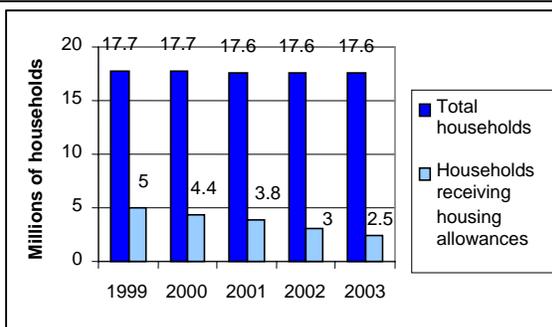
<sup>14</sup> This is valid for cases where the resource is metered and its consumption can be regulated.

<sup>15</sup> There were about 1.1 million of households that received housing allowances in 2005.

**Figure II-4**  
**Annual Expenditures per Household**  
**(Adjusted by CPI)**



**Figure II-5**  
**Number of Households Receiving Housing**  
**Allowances**



Source: State Statistics Committee.

II-6. Impact of household tariff increase on the budget is expected to be mitigated by an enlarged amount of taxes paid by sector utilities. Upcoming realignment of heat and water tariffs for households will increase budget spending on housing allowances and HCS privileges. However, the higher tariffs will also increase the tax base of sector utilities and this increase, as supported by improved bill collections, will largely offset the additional cost to the budget. Moreover, replacing implicit subsidies that are provided by sector utilities to households across the board with adjusted tariffs and targeted subsidies to the needy households will support poverty reduction in Ukraine.

II-7. Studying the ability and willingness of households to pay is a useful tool in adjusting the HCS tariffs. Such a study could inform decision makers on how much and for what level of services households are able and willing to pay. The study will involve households in defining an appropriate tariff level and will encourage them to buy into a tariff increase. Therefore, the government needs to develop methodologies for and promote studies on the ability and willingness to pay.

II-8. In general, public participation is a critical element of the tariff revision process and therefore it should be widely exploited by municipalities. The benefits of public participation include improved relations among local authorities, utilities, and households because stakeholders will better understand each other. Also, public participation will raise awareness about the problems facing utilities, so they will both understand and be stakeholders in the restructuring of HCS services.

II-9. Public involvement in the HCS reforms has been tested in several Ukrainian cities under the USAID-financed project called Tariff Reforms and Communal Service Enterprise Restructuring. Public participation has been a very effective tool in gaining the support of households for tariff increases and improving their payment discipline. It is recommended that this pilot practice be expanded nationwide in order to engage households in a dialogue on HCS sector reforms and get their support for critically needed tariff realignment and collection improvement.

## Nonpayment

II-10. The nonpayment of bills is the second largest issue negatively affecting the financial viability of the heat and water sectors. Nonpayment was especially prominent during the period 1995–2001, which led to the accumulation of large receivables by water and heat utilities. Thereafter, collections gradually improved and reached nearly 100 percent by 2005. Overall improvement however, masks differences in collection levels among cities and different categories of consumers. Households<sup>16</sup> remain the major cause of uncollected bills for both heat and water sectors. Because they account for a bulk of the heat and water consumption, nonpayment by households significantly reduces cash inflows of utilities. Upcoming increases in utility tariffs is likely to undermine the present level of tariff collections, therefore efforts need to be made by sector utilities and municipalities for maintaining and improving the payments by households for heat and water services. In addition to nonpayment by households, water sector utilities in several cities faces difficulties in collecting water bills by heat sector utilities that purchase water for preparing and selling hot water. The central government will need to develop a clear normative framework for the provision of hot water in order to sort out this issue.

### *Nonpayment by Households*

II-11. Nonpayment by households is largely caused by a poor commercial orientation of utilities and inadequate support from municipalities. Utilities and municipalities should work hard for improving collections from end customers. The experience of a number of Ukrainian cities (such as Chernigiv and Ternopil and others) in 2004 and 2005 proved that the coordinated efforts of local authorities and utility management can bring collections to above 100 percent (including the collection of past debts), despite technical and legal difficulties in enforcing the payment discipline. “Champion” utilities and municipalities, improved collections by applying the following measures: (i) public information campaigns in mass-media about the importance of payment for preserving HCS, (ii) financial incentives to utility staff for improved collections, (iii) installation of modern billing systems in order to timely send bills for current consumption and regular reminders about past debts, and (iv) remuneration of disciplined customers by lotteries and discounts and publicizing such actions.

II-12. In addition, nonpayment by households is caused by issues that are within the purview of the central government. These issues include the following:

- legislation forbids the HCS utilities to charge penalties for untimely payment of HCS bills
- legal and technical barriers to disconnecting nonpaying households

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<sup>16</sup> This relates only to the payments that should be assumed directly by households. Housing allowances, which are funded by the central budget and transferred through local budgets to heat and water/sanitation utilities, have been fully paid in the past years. Privileges for households for heat and water services, which are also provided by the central budget and transferred to heat and water/sanitation utilities, were not always fully paid in the past, but the payment of the privileges became adequate in 2004 and 2005.

- lack of effective mechanisms for seizing individual property of delinquent customers
- declarations of authorities to write off household HCS debts
- budget failure to finance granted occupation privileges
- deficiency of the social safety net

The following examines the issues and provides recommendations for addressing them.

II-13. *Legislation forbids the HCS utilities to charge penalties for untimely payment of HCS bills.* The payment discipline of households is undermined by the lack of a civil penalty for untimely payment of HCS bills. The procedures for and amount of fines on households for overdue HCS bills were developed and approved in 1992.<sup>17</sup> However, the Cabinet of Ministers temporarily suspended the fines on HCS in 1995,<sup>18</sup> and in 1996 the Parliament passed a law forbidding charging fines.<sup>19</sup> The approval of these consumer protection measures was mainly driven by the deep macroeconomic crisis in the country and widespread wage arrears in the second half of 1990s.

II-14. Ukraine has overcome the 1990s macroeconomic crisis and since 2000 has demonstrated consistent economic growth. The growth resulted in, among other things, a dramatic elimination of wage arrears and large increases of salaries (salaries in real terms almost doubled between 2000 and 2004, and further increased in 2005). However, the law forbidding fines for heat and water bill nonpayment is still in place. If households' payment discipline is to be improved, the Parliament should repeal Law # 486/BP and the government should develop and approve mechanisms for computing charges for overdue payment for HCS.

II-15. *Legal and technical barriers to disconnecting nonpaying consumers.* Utilities face legal and technical problems when attempting to disconnect delinquent households living in MABs. While in principle legislation allows disconnection, there are inconsistencies and deficiencies in the legal framework that make its practical application difficult. Specifically, neither agreements nor rules for supply of heat, water, and sanitation spell out the procedures for temporary or final cutoff of customers. As a result, disconnection can be done only based on a court decision. Appealing to a court is a lengthy process that can be ineffective (there are cases where courts decided in the household's favor). The government needs to complete the normative framework that will enforce the payment discipline of households by allowing utilities to legally disconnect delinquent consumers without appealing to courts.

II-16. The design of the heat and water network in MABs challenges the technical feasibility of disconnection. The vertical layout of interior heating pipes and the placement of water cutoff valves inside apartments makes the cutoff technically difficult.

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<sup>17</sup> Cabinet of Ministers Resolution # 572 of December 8, 1992.

<sup>18</sup> Cabinet of Ministers Resolution # 798 of October 12, 1995.

<sup>19</sup> The Law of Ukraine "On Timely Suspension of Charging Citizens of Ukraine for Untimely Payment of HCS," # 486/BP of November 13, 1996.

A strategic approach for the central government for addressing these issues would be to develop effective forms of housing ownership and management in MABs. In this case, heat and water providers will contract a single legal entity while the latter will be entirely responsible for collecting heat and water bills from the building inhabitants. However, the development of effective ownership and management models is likely to take time. Therefore, in the short run, sector utilities should maintain efforts to disconnect nonpaying households and publicize those events through local mass media in order to provide incentives to others to settle arrears and pay on time.

II-17. *Lack of effective mechanisms for seizing individual property of delinquent customers.* Because of the technical and legal difficulties in disconnecting nonpaying households that reside in MABs, there is a need to develop payment enforcement mechanisms. The central government could support bill collection efforts of heat and water utilities by developing streamlined procedures that would allow sector utilities to seize individual property of delinquent customers. An option would be to introduce a lien system on individual apartments but if this option is elected it should be preceded by the development of social housing.

II-18. *Declarations of authorities to write-off households' HCS debts.* Central authorities made repeated promises to write off HCS arrears by offsetting households' savings frozen in the Soviet Savings Bank. The declarations were not followed by development of mechanisms to practically carry out the offsets until fall 2005. This has negatively affected payment discipline over the past decade and has caused the accumulation of large accounts receivable at heat and water utilities.

II-19. *Budget failure to finance granted HCS related privileges.* There were cases when HCS related privileges were granted but not sufficiently budgeted or executed. For instance, according to the 2004 annual report of the Ministry of Architecture and HCS, the HCS sector losses caused by the underfinancing of the granted privileges amounted to UAH 700 million in 2003. If the privileges are to be granted, they should be fully budgeted and executed instead of being implicitly provided by HCS utilities.

II-20. *Deficiency of social safety net.* The SSN, which comprises housing allowances component, has been functioning in Ukraine since 1995. While it has helped poor households cope with the increase in utility tariffs, and as such, mitigate the impact of raising living costs on the poor, several studies of the efficiency of the SSN consistently indicated that the system in place has substantive inclusion and exclusion errors. The exclusion errors have adversely affected the ability of poor households to pay for HCS. If the use of public funds under the SSN is to be made more effective and also improve payments by needy households to HCS providers, there is a need to reduce the inclusion and exclusion errors by tuning the eligibility criteria of the SSN. Upcoming increases in utility tariffs only underscore the need for a well-targeted SSN. Also, local governments may consider complementing the central government HCS subsidies with local assistance for the most needy and vulnerable households (some municipalities have started to financially support the poor that are not covered by the centrally financed SSN). The government should maintain a policy of providing housing allowances, which is a part of

the SSN, only to the households with no outstanding debts to HCS providers. This approach has proved to be effective in ensuring full payment for HCS.

### *Nonpayment by Heat Supply Companies to Water Supply Companies*

II-21. Heat supply companies often do not pay water supply companies for water. The nonpayment largely results from two causes. First, a deficient normative framework creates disagreements between water and heat utilities about prices and sewage services for hot water prepared at heat group substations.<sup>20</sup> Second, heat supply companies have difficulty collecting payments from households for hot water. A long-term solution to the first issue is to gradually replace the heat group substations with individual substations. This will also improve energy efficiency of district heating systems and make them demand side oriented. A short-term action would be to develop a normative package stipulating rules, including commercial aspects, for delivering hot water from group substations and disposing of the wastewater. The second issue- nonpayment by households-is examined in a subsection of this chapter.

### **Commercial and Unaccounted Technical Losses**

II-22. Commercial and unaccounted technical losses of water and heat service providers are the third factor causing financial distress of the sectors.<sup>21</sup> Commercial losses are huge but barely acknowledged and therefore not addressed by sector utilities and relevant sector bodies. For instance, commercial and unaccounted technical losses of water utilities can be as high as 50 percent—that is, more than half of the water entering a trunk pipe network is lost without being accounted for. These losses inflate energy costs and hence overall production costs and undermine the financial performance of utilities.

II-23. Commercial losses are largely caused by unbilled households' consumption. This can apply to both metered and nonmetered customers. The losses of metered households are due to the poor quality of individual meters or fraud. Nonmetered households often consume more than specified by norms—that is, more than they are billed for. In order to combat the commercial losses utilities need to install meters at entry points of the MABs and allocate the measured consumption among nonmetered and metered consumers. The implementation of this measure should be supported by developing an appropriate methodology for allocating heat and water consumption metered at entry points of MABs among inhabitants of buildings. Moreover, meters that do not accurately measure small flow rates, and those that are susceptible to fraud, should be forbidden for commercial metering.

II-24. Unaccounted technical losses are stemming from compensating in tariffs only a part or actual losses in transmission and distribution network. This discrepancy is caused

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<sup>20</sup> Heat group substations serving a group of MABs are widely used in Ukraine for delivering heat and hot water.

<sup>21</sup> For the purpose of this report commercial losses are defined as the difference between the amount of commodity (heat, water) coming into transmission network from the production point (adjusted by the transmission and distribution losses reflected in tariffs) and billed sales.

by the lack of a comprehensive and accurate metering system for measuring technical losses along the route from production to end consumers. Even when meters are in place, utilities are reluctant to report the actual technical losses because they largely exceed the normative losses and this discrepancy is penalized. To address this discrepancy, utilities will need to invest in proper metering systems and should be exempted from penalties when reporting actual losses for the first time in order to establish a baseline loss indicator.

II-25. Local authorities regulate and oversee heat and water sector utilities and therefore should play a key role in monitoring the losses and providing utilities with incentives to reduce them. A good example in reducing network losses of utilities is provided the Ukraine National Electricity Regulatory Commission, which through incentives greatly contributed to the reduction of the losses in the electricity distribution network from 20.1 percent in 2001 to 15 percent in 2004 (including a drastic reduction in commercial losses from 7.8 percent to 3.7 percent).

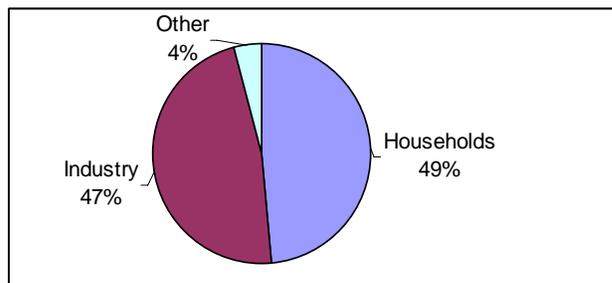
### Excessive Receivables and Payables

II-26. Excessive accounts payable and receivable constitute the fourth issue adversely affecting the financial standing of sector utilities. The heat and water sectors have accumulated huge accounts receivable and payable, both of which are exceeding the annual sales. While the receivables are nearly equal to payables, a significant portion of the former is bad debt—that is, the sectors are technically bankrupt.

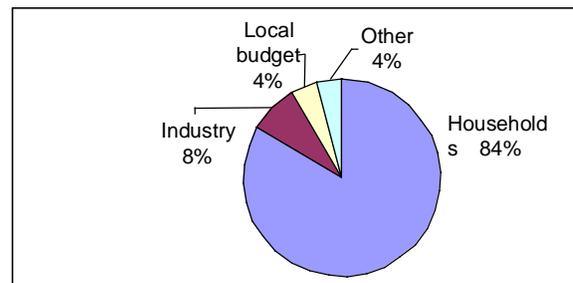
#### Receivables

II-27. Chronic nonpayment by end consumers has caused the accumulation of large accounts receivable. They reached UAH 3.04 billion in the water sector and UAH 3.74 billion in the heat sector as of January 1, 2005. As indicated in figures II-6 and II-7, households and industrial customers comprised most of the nonpaying customers. A majority of the receivables is overdue and it is estimated that at least 20 to 30 percent of household arrears will never be collected.

**Figure II-6**  
**Composition of Water Sector Receivables**



**Figure II-7**  
**Composition of Heat Sector Receivables**



Source: Ministry of Architecture and HCS.

## *Payables*

II-28. Loss-making tariffs, nonpayment by end consumers, and commercial losses have reduced the revenues of utilities and as a result, they have not been able to honor their obligations to creditors. Accumulated accounts payable are nearly equal to the reported receivables and are owed mainly to electricity and gas suppliers, central and local budgets, and employees via wage arrears.

## *Debt Restructuring*

II-29. Debt restructuring efforts carried out so far have not brought tangible results. The government has undertaken efforts to restructure sector debts through passage on February 20, 2003, of the Law on Restructuring Arrears for Housing and Communal Services, Consumed Gas, and Electricity. The law provides for the restructuring of households arrears to utilities but has two major deficiencies. First, it addresses the sector debt in a partial way by restructuring only the receivables of utilities (not both receivables and payables). Second, participation of indebted households in the restructuring is voluntary.

II-30. Because of the above shortcomings, the law has not been effective. Specifically only about 15 percent of water and heat receivables were restructured as of January 1, 2005. As a result, water and heat sectors are still plagued with large amounts of nonrestructured debt from accounts receivable and payable. If the sector debts are to be comprehensively and effectively addressed a more systematic debt restructuring exercise needs to be undertaken.

II-31. Sizable amounts of receivables and payables and debt overhang (that is, actual payables are larger than adjusted by bad debts receivables) require debt restructuring among the concerned sector participants. Debt restructuring should be carried out by each utility and comprises the following steps:

- Make an inventory of the receivables and payables.
- Determine a portion of payables and receivables that could be mutually offset—for example, unpaid heat and water bills of budget entities could be offset by the tax arrears of utilities.
- Determine the portion of payables and receivables that needs to be written –off.
- Restructure the remaining debts along the debt chain (end consumers-utilities-creditors).
- Estimate the debt overhang and determine sources of its repayment.

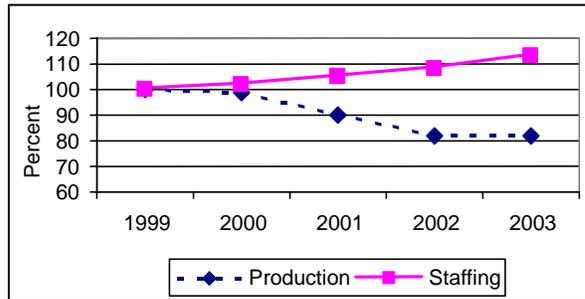
The legislation that hinders implementation of the above measures, should be amended. Depending on the complexity and the number of legal constraints it may be appropriate to pass a comprehensive debt restructuring law for the heat and water sectors (or eventually

for the whole HCS sector). Such a law would complement the recently passed law on energy sector debt restructuring.

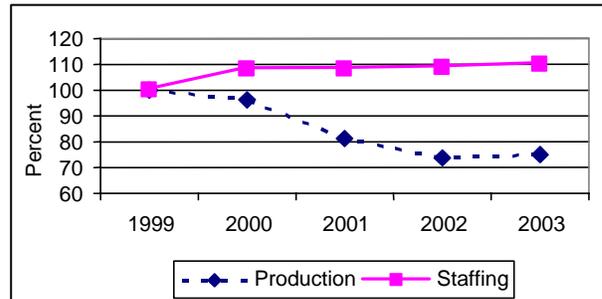
### Inefficient Operation of Utilities

II-32. The last but not least significant cause of financial distress in the heat and water sectors is inefficiency of sector utilities. Utilities lack incentives to act as commercial entities. They are overstaffed and give a low priority to cost effectiveness, profit generation, and the quality of delivered services. As a result, the overall performance of the heat and water sectors in Ukraine is substantially worse than the equivalent industries and sectors in developed countries. Moreover, the performance and productivity of utilities has been steadily worsening, as shown in figures II-8 and II-9.

**Figure II-8**  
Water and Sanitation Utilities Production and Staffing, 1999–2003



**Figure II-9**  
Heat Utilities Production and Staffing, 1999–2003



Source: Ministry of Architecture and HCS.

II-33. Despite overstaffing, utilities are lacking financial and commercial skills. Moreover, the professionalism and motivation of utility staff are rather low. There are a number of issues pertaining to deficient ownership governance and management arrangements that cause poor performance of utilities. These issues and recommendations for addressing them are provided in chapter III of this report, in the section titled “Improving Utility Governance and Performance.”

## **Chapter III. Improving Institutional Arrangements**

### **Summary**

III-i. Provision of heat and water services in Ukraine at the time of the Soviet Union was centrally managed under the communist command and control regime. This governance arrangement together with huge state capital grants and cheap energy prices allowed the government to ensure a relatively satisfactory provision of the services but did not promote efficient operation of sector utilities.

III-ii. Decentralization of ownership, management, and regulation of HCS was not accompanied by development of required institutions. Moreover, state support to the sectors ceased and energy prices increased. This negatively affected the heat and water sectors. Responsibilities for providing HCS, including heat and water, were handed over to municipalities in the context of broader administration reform that has been going in Ukraine since early 1990s. The legal and regulatory framework of the sector was developed at various stages of the administration reform and caused the overlap of competencies, lack of coordination, and misallocation of functions among the involved bodies. This confusion magnified the disadvantages of the decentralized arrangement instead of exploiting its benefits.

III-iii. If the decentralized heat and water sectors are to function satisfactorily the central authorities should the institutional arrangements in the sectors. They should focus efforts on the following priority actions:

- Design and implement a sector regulatory model that balances the interests of the stakeholders. The regulatory model should include the development of legislation, institutions, and instruments appropriate for the decentralized organization of the HCS sector.
- Revise and develop sector legislation. The revised or new legislation should clearly and comprehensively determine competencies and delineate the rights and responsibilities of the stakeholders including central and local authorities, service providers, intermediaries (Zheks), and consumers. The legislation should also support the financial viability of the sector.
- Improve the governance of utilities owned by communities and managed by municipalities by developing, adapting, and introducing principles of corporate governance.
- Streamline and complement regulations in order to improve overall business environment in the country and attract private capital to the sector.

### **Designing An Effective Regulatory Framework**

III-1. The regulatory framework in the heat and water sector is deficient. The regulatory functions are vested with both central executive bodies and local authorities. At the

central level, the functions are shared among the Cabinet of Ministers, the Ministry of Architecture and HCS, the Anti-monopoly Committee, the Ministry of Economy, the Ministry of Energy, and the National Electricity Regulatory Commission (NERC). At the local level, functions are shared by oblast administrations and councils, local councils, and executive bodies. Because of protracted administration reform, especially on issues related to self-governance and budget relations, the division of roles and responsibilities among various tiers of the government regulating heat and water sectors is unclear and deficient. Legislation developed at various stages of the administration reform did not establish a comprehensive regulatory framework and instead caused the overlap of competencies, lack of coordination, and misallocation of functions among the involved bodies.

III-2. The present regulatory system is detrimental to the interests of major stakeholders. The model decentralizes provision of HCS, including heat and water, and is mainly vested with local authorities. They have weak or no accountability on HCS matters to the central government or the population and often utilize regulatory authority to avoid political pain. Furthermore, municipality staff involved in the regulation of heat and water utilities often lack economic and technical skills required to perform regulatory functions. Therefore, the present regulatory arrangement is detrimental to financial and operational viability of utilities, but most importantly to the long-term interests of the largest share of the sectors' consumers and the ultimate owners of the assets—households.

III-3. There is an urgent need to develop a comprehensive concept for effectively regulating HCS. Delaying revision of sector regulatory arrangements will further undermine sector performance and the level of services. Because HCS is important to satisfactory living standards, the delay with sector recovery is detrimental to society and may jeopardize the economic recovery of Ukraine. Therefore, there is a need to devise an effective regulatory framework that takes into account local socioeconomic specifics, the organizational structure of the sector, and compliance with ongoing administration reform. While developing the regulatory concept it would be beneficial to draw lessons from international experience. In support of this suggestion, the following discussion reviews international elements of good practice in regulation, institutional options for regulatory bodies, and regulatory methods.

#### *Elements of Good Regulation*

III-4. An effective and efficient regulatory arrangement should meet the following requirements: independence, accountability, transparency, predictability, and capacity.

III-5. *Independence.* Regulators should be protected from political capture, especially regarding decisions that could compromise regulatory outcomes. Regulators should also have financial independence, which will allow them to retain required expertise. The following safeguards could support the independence: (i) statutory authority; (ii) clear criteria for and participation of both legislative and executive branches in appointing regulators; (iii) fixed-term appointments of regulators and protection from dismissal

without just cause; (iv) funding from users fees or levies on utilities and exemption of regulators from the civil service salary cap; and (v) a prohibition against overturning regulatory decisions except through court appeals.

III-6. *Accountability.* Independence should be balanced with accountability in order to reduce risks of unfair distribution of rents. The following measures could help strike a proper balance between the two: (i) writing clear statutes specifying the rights and responsibility of the regulatory body and distinguishing between primary and secondary objectives when there are multiple goals; (ii) subjecting agency decisions to review by a court or another nonpolitical entity; (iii) requiring regulators to produce annual reports on their activities and subjecting their performance to formal reviews by independent auditors or legislative committees; and (iv) allowing the stakeholders to submit their views on matters under review and requiring regulators to publish their decisions and reasons behind them.

III-7. *Transparency.* Regulatory rules, agreements, and guiding principles shall be made available to both utilities and consumers in order to avoid corruption and get buy-in of the market participants.

III-8. *Predictability.* Regulators need to follow the rule of law, reverse past decisions only if they created significant problems, and decide cases with the same underlying facts in same way.

III-9. *Capacity.* The availability of well-developed economic, accounting, engineering, and legal skills is critical for ensuring quality of regulation. To meet this challenge regulatory bodies need to have freedom in hiring staff and sufficient financial resources to attract required skills.

III-10. Contracting out regulatory functions could help address some of the above challenges. Specifically, contracting out could strengthen the following aspects of regulation: (i) independence—by benefiting from reputation of external experts; (ii) capacity and competency—by responding efficiently to variable workloads, attracting specific skills only when needed, leveraging international experience, and building in-house skills through training; (iii) legitimacy—by increasing the legitimacy of regulatory process, especially in countries with a weak institutional capacity; and (iv) cost reduction—by benefiting from economies of scale of external consultants.

### *Institutional Options*

III-11. There are two main options for organizing regulatory bodies, namely the centralized and decentralized arrangements. Each has its advantages and disadvantages and several aspects need to be taken into consideration for making a proper choice. Specifically, the following items needs to be considered before selecting an institutional option: (i) assignment of sector responsibilities among national and subnational tiers of government; (ii) allocation of functional responsibilities on prices, quality, licensing, and the environment; and (iii) the relationship of the regulator with other sector entities

involved in regulation, such as the Ministry of Construction, Architecture and HCS, the Anti-monopoly Committee, and the Ministry of Economy.

III-12. Main pros and cons of the two options are summarized in table III-1.

**Table III-1  
Advantages and Disadvantages of Centralized and  
Decentralized Regulatory Options**

	Centralized	Decentralized
Advantages	<ul style="list-style-type: none"> <li>• Better use of scarce expertise</li> <li>• Higher quality of regulatory decisions</li> <li>• Separation of governance from regulation, and avoiding conflicts of interest</li> <li>• Better environmental safeguards</li> </ul>	<ul style="list-style-type: none"> <li>• Allows local conditions to shape regulation</li> <li>• Moves regulators closer to services allowing them to better get information on utilities</li> <li>• Opportunity for competition among municipalities for state support or private investment to promote HCS reforms</li> </ul>
Disadvantages	<ul style="list-style-type: none"> <li>• Requires time and resources to build</li> <li>• Risk of losing political and financial independence if legal framework is deficient</li> <li>• Complexity of delegating self-governance functions from lower to higher tiers of government</li> </ul>	<ul style="list-style-type: none"> <li>• Conflicts of interest stemming from the combination of regulatory, governance, and ownership functions in one body</li> <li>• Lack of expertise</li> <li>• High cost (aggregated at national level)</li> <li>• Good accountability is subject to developed civil society</li> </ul>

III-13. Several factors influence the best choice of organizational option. The decision on whether to improve the present decentralized arrangement or proceed toward a centralized option will need to be based on a careful examination of costs and benefits of each option. Such an analysis should take into account the political and economic feasibility of implementation, the economic characteristics of the sector, available human and other resources, and the overall institutional development in Ukraine. Sector organization will also shape the architecture of the regulatory arrangement. Specifically, if the decentralized option is to be applied, aggregated service providers combining several utilities, (for example, Luganskvoda) are likely to be regulated at the level of the aggregation (in the case of Luganskvoda, at the oblast level).

III-14. While deciding between centralized and decentralized options it would be also useful to draw on lessons from the centralized regulation of the power and gas sectors in Ukraine that NERC has been implementing since the end of 1994. In that respect, it is worth noting two facts that illustrate the government’s weak commitment to strengthening NERC’s authorities and responsibilities. First, the law on NERC has not yet been passed, though it was drafted several years ago. The delay undermines the financial and administrative independence of NERC. Second, power and gas tariffs for households are effectively regulated by the Ministry of Economy and are kept far below cost-recovery levels.<sup>22</sup>

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<sup>22</sup> Adequate household tariffs are extremely important for the financial viability of heat and water utilities because households represent the largest share of heat and water sector consumption. It is less so for power and gas sectors where the households account for about 20 percent of consumption.

### *Choice of Regulatory Method*

III-15. The right choice of regulatory method is a trade-off between a number of goals. Tariff regulation aims at meeting the following goals: compromise between interests of utility owners, investors, and consumers; supply-side efficiency; and demand-side efficiency. In practice, the aims can not be fully achieved simultaneously, hence the need for trade-offs among them. Worldwide, utility tariffs are regulated using mainly the following methods: cost-plus, price cap, benchmarking, or a combination of them. The choice of method depends on a variety of factors including quality of accounting and auditing systems, availability of economic and technical expertise, investment requirements, institutional checks and balances, and overall macroeconomic stability. Evolution of the above elements will influence the choice of optimal method for a particular stage of development.

III-16. Presently, an applied cost-plus method is not likely to be an optimal choice for regulating HCS in Ukraine. The regulation of water and heat utilities is carried out based on the cost-plus method and is facing the issues that are usually associated with it, magnified by local circumstances. Specifically, the issues include scarce expertise, poor quality of accounting systems, and lack of incentives at the utility level to improve performance.

III-17. Because of the stated above deficiencies of the cost-plus method, the price cap method seems to be more suited to present circumstances in Ukraine. If the price cap regulation is elected, initial tariffs would need to be established at a level that is high enough to restore financial viability of utilities, start addressing the investment backlog, and promote private sector participation. Once regulatory capacity and accounting and auditing systems have been strengthened, the cost-plus mechanism can be reconsidered in order to facilitate large-scale investments.

III-18. Hybrid methods could be more effective than pure cost-plus and price cap but they require higher regulatory skills. The hybrid methods try to reconcile opposite regulatory extremes imposed by pure cost-plus and price cap methods. They are designed to fit local circumstances and ensure an optimal tradeoff between supply- and demand-side efficiency, rent extraction, and capital attraction. Practical examples of hybrid regulatory mechanisms include the following:

- *Price cap and cost-plus combination.* The operating and maintenance costs are regulated using the price cap method and the investment costs through the cost-plus method.
- *Banded rate of return.* A range (band) of earnings is specified and prices are set/adjusted to generate earnings within the range.
- *Sliding scale profit or cost sharing.* Prices are adjusted if the utility's rate of return differs from an established level or range. The adjustment is partial to encourage efficiency and share profit (or costs) between utilities and customers.

- *Institutionalized regulatory lag.* The time between price reviews is known and fixed, and the utility's earnings between the reviews are not examined.

III-19. Applying hybrid regulatory schemes should be preceded by strengthening the professional skills of regulatory bodies. Introducing benchmarking (that is, setting up tariffs by comparing the costs and indicators of utilities with each other) will require the establishment of a national-level institution to gather and analyze data from individual utilities and time to accumulate a sufficient amount of data.

III-20. Regardless the method in use there is a risk that regulatory bodies will set up tariffs that reflect short-term political priorities and not long-term economic rationales. An option for addressing this regulatory challenge is to limit the discretion of regulatory bodies. This could be done by establishing minimum standards of HCS or performance indicators of utilities and legally obliging regulators to set up tariffs that allow utilities to comply with the standards and achieve the indicators. The standards may comprise hours of supply, compliance of potable water quality with norms, temperature and pressure of heat carrier, and so forth. The indicators may include, for example, energy consumption for producing a unit of water and heat, and financial losses. However, all these options will need to be accompanied by effective monitoring enforcement mechanisms.

### **Improving Utility Governance and Performance**

III-21. Heat and water utilities are inefficient and plagued with problems that are often associated with the poor performance of state (municipal) owned enterprises. Specifically, the utilities lack incentives to act as commercial entities, are overstaffed, and give a low priority to cost effectiveness, profit generation, and quality of delivered services. The governance and performance of heat and water utilities can be strengthened in two ways: first by improving the governance and management practices under the present municipal management and ownership, and second by involving the private sector.

III-22. Priority should be given to strengthening the municipal governance of utilities. Immediate prospects for private sector involvement in the heat and water sectors in Ukraine are dismal. Lack of interest in the private sector is caused by the following factors: (i) the worldwide limited attractiveness of the water and heat sectors as compared to other infrastructure sectors such as telecommunication, power, and transport; (ii) the present deficient legal and regulatory framework, which makes the sectors desperately unviable; (iii) a lack of understanding about whether and when the required legal and regulatory changes will be made and how sustainable they will be; and (iv) the relatively small size of utilities (except for utilities in oblast centers), which makes the utilities unattractive for solid private operators.

III-23. Furthermore, improved governance of municipal utilities will help involve the private operators in the sector and subsequently will properly supervise their performance. For instance, regular technical and financial audits will determine the

technical shape and financial standing of utilities. Availability of this information is likely to increase private sector interest in utilities. The availability of audit data prior to private sector participation (PSP) will also allow municipalities to establish baseline indicators against which the performance of private operators can be monitored.

III-24. The following discussion reviews the shortcomings of the current governance arrangement and considers how to introduce corporate governance practices into the management of utilities owned by communities and managed by municipalities. In addition, we advise sector decision makers about various PSP options and share lessons learned from worldwide experience of PSP in infrastructure sectors.

### *Improving Municipal Governance and Management Practices of Utilities*

III-25. Governance of municipal ownership is weakly developed both in legal terms and in practice. The two pertinent laws of Ukraine, namely On Local Self-Governance and On Housing and Communal Services, determine only general duties of municipal governments regarding utility governance. There is no special law for communal ownership governance in Ukraine and the existing draft law on management of communal ownership is deficient in multiple respects. In practice, local self government is often incompetent in governing utilities. No proper system of CEO (Director) utility assignment and motivation is in place. Local authorities that supervise utilities are usually unaware of structured company performance and no periodic disclosure procedures exist. Finally, local self government usually does not practice orderly supervisory and audit activities but instead make ungrounded interventions in the day-to-day activities of utilities.

III-26. The management of utilities is inefficient in resolving major operational issues and providing their respective territorial communes with high-quality services. In addition, management is often incompetent in the basics of economics and investment, too limited in its decision making, and highly dependent on local government opinion. Incentives to recruit good management for the utilities are absent and the remuneration policy for company management is weak. The standards of accounting and internal audit at utilities are low and computer facilities for major accounting and financial operations are not widespread. Utilities also have poor customer service and lag in technical maintenance of their assets.

III-27. If municipal water and heat utilities are to evolve into efficient and rational entities, the ownership governance and management arrangements need to be reformed. The reform agenda should be aimed at introducing corporate governance principles into the municipal utility sector and focus on rectifying deficiencies in the following areas:

- legal framework and ownership register
- duties and responsibilities of local authorities and utility leadership
- planning and supervising of utility activities
- accounting, auditing, and valuation procedures for utilities

- internal management practices for utilities

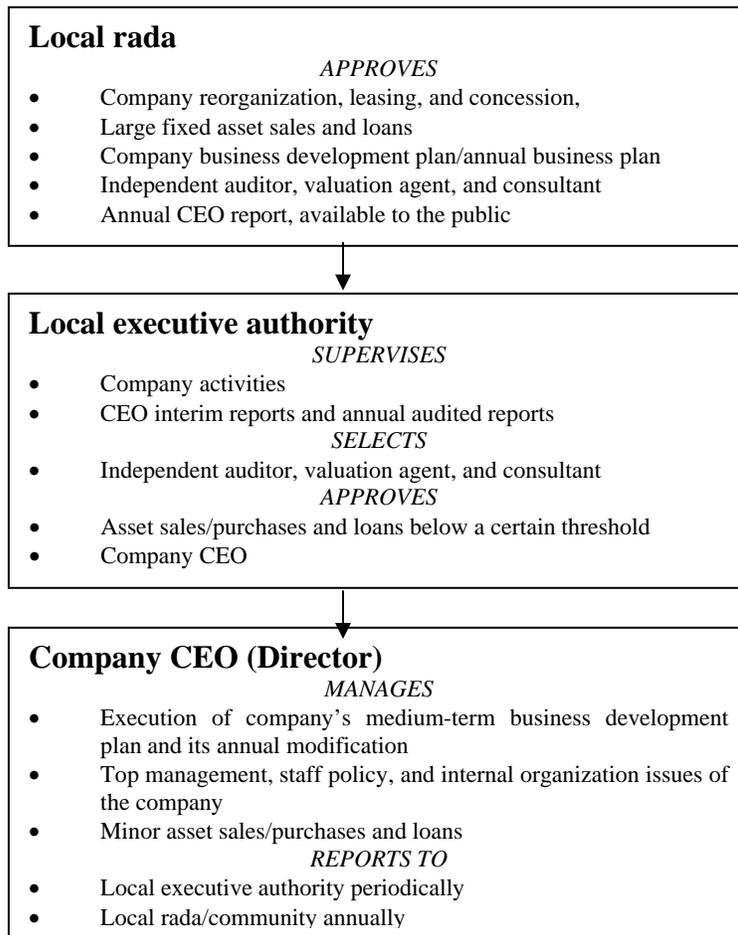
III-28. *Legal framework and ownership register.* Clear legal definitions for communal ownership and guidelines for utility governance should be provided. Though the transition of utility ownership from the state to municipalities has been going on since 1990s, there remains confusion about state and communal ownership. Without a detailed ownership register, local communities and authorities may face difficulties when attempting to restructure their utilities. Therefore, it is important to legally separate the state and communal ownership forms and define the communal ownership and owners. The necessary changes may include amendments to the Law On Self Governance in Ukraine, and the Law On Ownership, among other statutes.

III-29. An ownership register for municipal companies should be recorded and whenever feasible centralized. The register is the simplest way for the local community to realize its ownership rights in municipal companies. It is also a very efficient tool for summarizing the financial information of utilities and tracking company development over the years. Ultimately, creation of the register is a necessary step toward future liberalization of the utility market and attracting of private investors. Local authorities may decide to open the register information to the community and thereby to secure transparency of municipal ownership governance. Furthermore, it is recommended that a centralized register be created to back up the data from individual registrars. One approach is to create a central registrar within the line Ministry. The central register will secure the accuracy of prospective privatization and leasing procedures, but it may also be a useful database that the government can use to analyze relevant data for policy making in regard to utility services.

III-30. *Duties and responsibilities of local authorities and utility leadership.* The clear separation of duties and responsibilities for different utility company management players and primary rules for the interaction of those players are fundamental steps toward sound utility governance. Central authorities should further work towards adoption of the Law On Communal Ownership Rights and Management of Communal Ownership Entities, which would provide a major framework for the local communities to run their utilities. The law should establish clear separation of powers between company management and local authorities regarding asset procurement and sales, loan policy and asset leasing, CEO duties and responsibilities, supervision of utility activities, and public disclosure of utility activities.

III-31. Primary participants in utility management include the local *rada* (the approving and public control point), the local executive body (the major approving and supervisory point), and the CEO and top management (the executive point). A possible scheme for distributing duties and responsibilities among the participants is presented in figure III-1.

**Figure III-1  
Possible Utility Management Interaction Map**



III-32. It is important to develop sound procedures for the selection, remuneration, and firing of utility directors. Given the current deficit of professional and motivated leaders at utility companies, it is imperative to develop an accurate and transparent procedure for CEO selection. The selection needs to be conducted by a special commission comprising a variety of local authorities and public representatives. To make the CEO position attractive to private sector resources, the remuneration floor should be established at the private sector level and not linked to salary levels of local officials. Salary revisions should be proposed by the local executive body based on the review of annual reports and compliance with agreed performance indicators, then discussed and approved by local rada.

III-33. It is also productive to encourage local authorities to conclude long-term contracts with the CEO (three to five years) in order to give the CEO some freedom to act and sustain a long-term vision of company development. At the same time, the local executive council may submit a proposal to the rada to dismiss the CEO for unsatisfactory performance and significant deviation from business plan benchmarks. The

rada shall have the final say in dismissing the CEO after it considers arguments advanced both by local executives and the CEO.

III-34. *Planning and supervision of utility activities.* A medium-term utility business plan with annual interim stages and qualitative benchmarks should be periodically developed and approved by the rada. Approval of the business plan by the rada should signify a serious commitment by local authorities to utility company development, as well as reflecting the rada's expectations of the utility. It is recommended that the government develop a concept business plan<sup>23</sup> and distribute it among local communities.

III-35. Utility activities should be supervised through review of audited financial and technical reports, CEO interim reporting sessions, and annual CEO performance reports. The local authorities shall judge company performance from financial reports audited by independent auditors and technical audits conducted by independent experts. Annual technical and financial audits may prove costly to utility companies in small towns, but such audits should be conducted with some regularity, perhaps once every three years. Benchmarks for utility development should be set in the business plan and annual financial and technical reports should demonstrate the progress made toward completion of established goals. Supervision of CEO performance shall also be complemented with periodic CEO reports to local executive authorities and an annual CEO report to the rada. These reports should be available to the local public and mass media.

III-36. *Accounting, auditing, and valuation procedures for utilities.* Annual financial reports should be prepared with due diligence and audited by an independent auditor. Technical audits should be conducted by independent experts. To avoid conflicts of interest, both audits shall be carried out by independent companies and experts hired by the local rada. The audit reports need to be submitted both to the local authority and the local rada for a final approval.

III-37. To prevent possible asset-stripping activities and preserve ownership value for the community, stringent valuation procedures should be introduced. Specifically, it is recommended that valuation of all asset sales above a certain threshold of fixed assets be conducted by an independent valuation agent selected by local authority and approved by the rada. Similarly, all procurements by utility companies above a certain threshold of fixed assets should be conducted through an open tender procedure.

III-38. Annual financial and technical reports and CEO performance reports should be available to the local community. Besides encouraging the public to participate in discussions of the annual CEO performance report, local authorities should ensure free public access to company financial and technical reports. It is important to set a deadline for both the public CEO performance presentation and the subsequent report disclosure in the mass media. Another way to arrange reliable public access to company documents is to allow the public to obtain copies of entries in the communal ownership register.

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<sup>23</sup> The government may consider obtaining assistance in preparation of an exemplary concept business development plan from international consultants or aid agencies such as the PADCO/Municipal Development Institute.

III-39. *Internal management practices for utility companies.* Selection, hiring, and supervision of top utility management should be the responsibility and prerogative of a company CEO. CEOs should be able to choose a management team from people both inside and outside the company. To make this choice feasible, the guidance for utility staff remuneration policy as currently set by national labor agreements should be ceased. Instead, CEOs should motivate top management to work productively primarily through flexible performance-based remuneration in addition to fixed monthly salary. A system of individual performance benchmarks should be developed for each top management position. For example, technical indicators would be the benchmarks for top engineer's appraisal; collection and company profitability rates would benchmark the top economist's performance, and so forth.

III-40. Utility departments should be fully aware of their functions and reporting obligations. Management information systems (MIS) should be established and information exchange among major departments maintained daily. Major utility departments such as economic, accounting, personnel, customer care, and engineering departments should separate responsibilities and duties. The creation of a company computer network and the establishment of MIS should be a major step in toward defining department responsibilities.

#### *Private Sector Participation*

III-41. A large number of countries have opted for PSP because of dissatisfaction with the performance of state- or municipal-owned companies and/or the need to inject investment capital. Worldwide, there are several success stories that prove that well-designed PSP can improve the quality, reliability, and cost-effectiveness of service. On the other hand, there are also disappointing cases of early termination of private sector contracts. Ukraine can benefit from the lessons from vast international experience with PSP. The following discussion sums up various PSP options and presents lessons learned from PSP in infrastructure utilities during the past decade.

III-42. PSP options range from service contracts to full-fledged privatization and are distinguished from each other primarily by the degree of asset ownership, participation in capital investment, commercial risks, and duration (table III-2).

**Table III-2**  
**Allocation of Responsibilities under Various PSP Options**

Option	Asset ownership	Operation & maintenance	Capital investment	Commercial risk	Duration
Service contract	Public	Public and private	Public	Public	1–2 years
Management contract	Public	Private	Public	Public	3–5 years
Lease	Public	Private	Public	Shared	8–15 years
Concession	Public	Private	Private	Private	20–30 years
BOT/BOO	Private and public	Private	Private	Private	20–30 years
Privatization	Private or private and public	Private	Private	Private	Indefinite (may be limited by license)

Source: World Bank.

Note: BOT denotes build-operate-transfer; BOO denotes build-own-operate.

III-43. The selection of an option depends on the objectives of the PSP and the feasibility and suitability of the option under local conditions. When choosing a PSP option, the municipality—or municipalities in the case of aggregated utilities such as for water provision in Donetsk and Lugansk oblasts)—will need to identify major issues regarding provision of water and heat; evaluate to what extent the available options address the issues; and assess the municipality’s capacity to assume corresponding roles, responsibilities, and risks.

III-44. Recommendations for the PSP options that are legally allowed in and relevant to Ukraine’s heat and water sectors are summarized below, along with their advantages and limitations.

III-45. *Service contract.* Though relatively simple, service contracts must be specified and monitored. If the utility is poorly managed, its service contracts probably will be too. Service contracts are at best a cost-effective way to meet specific technical needs for a utility that already well managed and commercially viable. They cannot substitute for reform in a utility plagued by loss-making tariffs and inefficient management.

III-46. *Management contract.* Management contracts can be good first step toward a more pronounced involvement of private sector, particularly in the following cases: (i) tariffs are too low to support a commercial operation and more time is needed to increase tariffs or develop a system of public support compatible with PSP; (ii) the regulatory framework is deficient and needs to be developed before a long-term PSP option can be secured; (iii) the country lacks a good record of public-private partnerships; and (iv) the municipality faces difficulties in committing to a long-term arrangement and inducing the private sector to undertake investments and accept risks.

III-47. *Lease.* Leases are most appropriate when there is scope for big gains in operating efficiency but only a limited need for investments. Pure lease contracts are rare and often arranged as a hybrid with a concession contract.

III-48. *Concession*. The main advantage of a concession is that it passes the full responsibility for operations and investments to the private sector and as such benefits from efficiency gains in all utility's activities. The concession is therefore an attractive option where large investments are needed to rehabilitate and modernize assets. Transparency and comprehensiveness of the concession legislation will increase the chances of successfully implementing this option.

III-49. *Rehabilitate-operate-transfer (ROT)*. ROT contracts usually cover a segment of the utility system that can be separated from others in terms of cost allocation, efficiency, or other factors (such as heat production, water intake, and waste water treatment). Because of the high energy intensity of water and heat utilities, ROT contracts have a great potential in Ukraine and can be built around the ESCO concept.

III-50. The experience to date of the Central and Eastern European countries in attracting private operators to the heat and water sector seems to be relevant for assessing prospects of Ukraine in this area:

- PSP is more developed in countries with objective, transparent, and nondiscriminatory regulatory mechanisms.
- Countries with a relatively high GDP per capita (such as Poland and the Czech Republic) are more likely to apply all forms of PSP, including divestiture, and are looking for strategic investors, especially for utilities in large cities.
- Countries with medium GDP per capita (such as the Baltic countries) tend to invite PSP in the form of leases and concessions, while keeping the ownership of assets in state (municipal) hands.
- Countries with low GDP per capita have not been successful in attracting the private sector for management and rehabilitation of assets and have mainly relied on the IFI-financed projects.

III-51. Sector decision makers should also study lessons learned from PSP in the infrastructure sector around the world. Recommendations stemming from the international experience are summed up below<sup>24</sup>:

- PSP arrangements should not be thought of as a magic solution that will meet expectations regardless of legal and regulatory deficiencies and adverse macroeconomic conditions. Instead, a positive and trusting working relationship should be established with private operators. Such a relationship will allow for contract adjustment if needed in a way that satisfies all involved parties—customers, operators, and the municipality.

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<sup>24</sup> The recommendations largely draw on materials from the article “What Went Wrong? Lessons from Cochabamba, Manila, Buenos Aires and Atlanta”, written by Kathleen Slattery, Director of Water, Sanitation and Urban Service Practice at the Institute for Public Private Partnership (IP3), Inc.

- Explore all options of PSP (including management contracts) to allow for a phased increase of PSP when affordability and overall macroeconomic stability is problematic.
- Involve sector stakeholders at the earliest stage of project formulation via strategic communication and consultations in order to ensure sufficient stakeholder support and that the project is designed in a demand-responsive way.
- A thorough assessment of the financial and technical status of the utility, prior to concluding an agreement with a private operator, is a necessary prerequisite for proper monitoring of operator achievements. The assessment provides base-line indicators for monitoring performance.
- Investment requirements in the case of concession or divestiture must be balanced with the consumers' ability and willingness to pay. Comprehensive feasibility studies, including an investment plan with high, medium, and low options coupled with a study of ability and willingness to pay, are essential tools for assessing the viability of investment plans.