REGULATION OF UKRAINIAN DISTRICT HEATING SECTOR

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1. Current situation in Regulation of Ukrainian District Heating (DH) Sector .

The situation in the District Heating Sector of Ukraine became worse when large DH enterprises were reorganised into the smaller companies (more than 900), ownership was transferred to the municipalities and real regulation was moved to local administrations. As a result of these changes technical and management capabilities were lost, “political” regulation took over economical logic in many cases, the shortage of financial recourses caused unreliable and inefficient operation, and very slow processes of renovation resulted. Uncontrolled disconnections, consumer debts, incorrect regulation (for instance, smaller consumer, lower gas price) and significantly increasing prices for fuels and other resources make situation in DH sector of Ukraine critical. There are cases when DH networks were frozen during winter time and people evacuated from multiflat buildings, some DH systems collapsed and were shutdown at all.

Heat production is carried out by 250 cogeneration (CHP) plants and more than 7000 heat only boilerplants. Cost allocation between heat and electricity in CHP plants is controlled by National Commission for Regulation of Ukrainian Electricity Sector (NC). This institution has prepared three different methodologies for cost allocation but all of them are not officially approved by state institutions, so they apply individual approach to the separate CHP plants. Regulation is based on “cost plus profit” principals when historical data of concrete plant is analysed. Neither technical nor economical statistical nor theoretical norms are used for cost estimation. There is a significant risk to increase cost of heat (regulated product) and to reduce cost for electricity (free market product) when such regulation applied.

Heat production in the heat only boiler plants, transmission and distribution are regulated by municipalities and these activities are paid via separate components of the final heat price. Officially approved methodology (in fact, very general cost calculation rules) is applied for heat pricing (Decision of Ukraine Government Nr 955 date 10 July, 2006). Heat prices are approved by municipalities and can be reconsidered if separate component of cost has been changed significantly

(no concrete criteria for price adjustment). Application of price cap method is allowed as an option but various restrictions exist. Personnel bonuses are allowed if any cost component is improved (based on calculation). Generally, the following conclusions based on available legal acts and discussions about currant situation in Ukrainian DH sector can be made:

1) No efficient planning or regulation of DH networks development;

2) Individual approach regarding disconnections or connections of new consumers - many large consumers bankrupted or went away – DH systems have become oversized in most cases;

3) No reliable and concentrated technical or economical characteristics of DH companies and there is no possibility to apply bench marking for cost estimation;

4) Existing laws and secondary legislation very general and flexible, too much space for individual interpretations;

5) Building-level heat metering installed in the 40 % of buildings only and very few hot water meters in apartments;

6) Heat allocation mainly related to square meters or number of people living in the separate apartments;

7) Heat losses above officially established limits are converted into the norms of heat allocation to the final consumers;

8) No serious motivation to reduce cost of heat supply or consumption;

9) Heat price regulation is in fact “political” and income for the supplied heat covers only half of real expenses;

10) Shortage of financial resources is covered mainly by municipalities from their budgets;

11) Renovation of heat production and transmission facilities is very limited;

12) Several serious accidents took place in Ukrainian DH systems when heat supply was shutdown during winter time;

13) In spite of declaration in Energy strategy to promote cogeneration district heat systems have been decentralised in some towns of Ukraine;

14) Private investors are very skeptical about participation in operation and renovation of DH systems. Only few cases of leasing activities;

15) Social support system has been introduced which assist poor people to pay for heating, hot water supply and other communal services;

16) Owners of privatised apartments in the multiflat buildings do not take care about common construction and infrastructure of the building, so heat consumption is enormous and will not be reduced in the near future;

17) Hot water supply systems have been removed from many resident buildings;

18) DH companies and municipalities might not be able to by fuel and other resources for the coming heating season;

19)

Due to the critical technical and financial situation of Ukrainian DH companies state institutions try to set new heat sector regulation system to meet existing and new challenges related to increment of fuel prices and necessity to increase efficiency of DH systems. Member of Ukrainian Parliament Mr.Oleksandr Popov in assistance of several experts has prepared a draft Law on Heat Regulation (LHR). This Law has several positive statements like establishment of the National Regulator (NR) that should ensure economical regulation of communal services. NR would set prices for heat produced in heat only boilerplants, transmission and supply. Ministry of Housing and Utilities Infrastructure has established Department on Regulation (Director- Olena Gavriliuk) and several groups of experts were formed who intend to discuss and prepare basics of new regulation for the district heating and related sectors. This activity is in a very beginning phase and no concrete documents were available at the time of visit (13-17 of July).

2. General recommendations on regulation of district heating sector.

Study of Ukrainian legislation, discussions with representatives of various institutions and experience during transition period in Lithuania and neighboring countries lead to the following recomendations regarding regulation of DH sector of Ukraine:

1. Planning at the municipal level should define which territories should be heated by DH systems and where it has to be decentralized if not feasible;
2. Reliable and efficient operation and development of perspective DH systems must be ensured by licensing system and other mechanisms of state regulation;
3. Real economical basis for DH sector operation should be ensured and political regulation eliminated;
4. Concrete and clear principals for heat, hot water pricing and tarification of related services should be fixed in the Law on Regulation or other legal acts as much as possible to exclude speculations and political impact when unpopular decisions take place;
5. National Regulator for District Heating and Water Supply should be established or these functions could be allocated to the existing regulator - NCR. National Commission for Regulation

has an experience of regulation, staff, regional offices, infrastructure etc., and this solution would be least-cost for Ukraine. National Regulator must coordinate regulation of different monopolies because they are interfaced in many fields (cost allocation between heat and electricity in cogeneration plants, differentiation of gas tariffs etc.).

6. The main role of National Regulator should be preparation of clear methodologies, collection of technical and economical data, analysis, comparison and formation of unified technical and economical norms, standards, efficiency targets etc. for cost calculations when large number of DH companies exist and other usual functions of regulator;

7. Price setting should be done by regional offices of Regulator with participation of municipalities. Final decision would be by Regulator;

8. Regulatory reporting and monitoring, control of applied prices and licensing conditions, dispute settlement etc., among other functions of National Regulator;

9. Investment plans prepared by DH companies should be approved by responsible municipality and Regulator;

10. Long term (3-5 years), basic heat price methodology with adjustment to unavoided factors (fuel price, inflation, investment and climatic factor) should be introduced. Basic heat price is a maximum allowed price and lower heat price can be applied only in case if there are allocated financial resources which compensate lost income (usually municipal budgets);

11. District heating network must be alone on the licensed territory and licensees must ensure reliable and efficient operation, connection of new consumers and carry out other functions corresponding to licensing regulation;

12. Competition could be introduced by National Regulator in the field of heat production: Licensed DH companies must have an obligation to buy thermal energy from independent heat producers if this business reduces cost of heat supply to final consumers. Dispute settlement could be under Regulator. This regulation stimulates industrial companies to deliver waste heat to the DH systems and similar;

13. Building level heat metering must be implemented by law - minimal precondition for economical regulation;

14. Apartment-level hot water metering should be introduced together with cold water metering gradually by decision of apartment owners (or municipalities) and mandatory in the multiflat buildings in which consumption of heat and water exceed defined norms. Corresponding financial recourses must be included in water or heat prices;

15. Rehabilitation fee should be introduced and applied for the multiflat buildings where heat

consumption over exceed established standard. Collected money can be used for renovation of the building only (installation of heat substations or thermostatic valves, replacement of windows, thermo insulation of walls etc.,);

16. Federal and municipal support or assistance funds to DH sector should not be distributed per total amount of heat units (more support receive larger and usually richer consumers) but allocated per limited amount of heat delivered per month or year (relatively more assistance for small consumers it means poor people);

17. Separate social support schemes should be related to obligation participate in rehabilitation programme of building rehabilitation, payments of bills or similar;

Heat sector regulation is related to development of all district energy infrastructure and housing, so state regulation should be based on systematic and clear principals and competence which should be fixed in the law system. It is recommended to use attached guidelines (Appendix 1) or similar scheme to form such regulation for district heating sector. For pricing of heat, hot water supply and related services recommended to use scheme (Appendix 2) where price structure and responsibilities are fixed.

Appendix 1

GUIDELINES ON STRUCTURE OF REGULATION IN THE DISTRICT HEATING SECTOR OF UKRAINE

Nr.	Field of regulation	Regulation	Competent institution	Legal act	P.s.
1.	**Heat production**				
1.1.	Heat generated in "heating only boilerplants"	Long term price cap, based on bench marking	NR	LHR?	
1.2.	Heat generated in CHP plants	Competition in electricity sector. Regulation of cost allocation between heat and electricity	---- NC	LCHP?	OK OK
1.3.	Heat produced by independent suppliers	Competition, obligation to purchase heat by DHC	NR	LHR?	Dispute. setl. by NR?
1.4.	Heat produced for separate multiflat buildings only	Non regulated? Regulated?	? ?	?	Discri-minat.
1.5.	Third part access	Not allowed?			OK
1.6.	Approving of investment plans in heat production plants	Municipalities? NR? Ministry?		?	OK OK OK
2.	**District heating networks development**				
2.1.	Expansion to the new territories	Planning, zoning, targeting? Competition with gas suppliers?	Municipalities ---------	?	OK ?
2.2.	Payment for connection of new consumers	From general transmission tariff Only new consumers? Municipalities or others? Individual tariffs allowed?	NR	?	OK ? OK OK
2.3.	Disconnection from DH systems of separate buildings	Non regulated Allowed with compensation Prohibited	----- NR -----	?	? OK ?
2.4.	Disconnection from DH systems of separate flat	Prohibited		?	OK
2.5.	Approving of investment plans in heat transmission networks	Municipalities? NC? Ministry?		?	OK OK OK
3.	**Housing**				
3.1.	Inlet heat meters	Obligatory	DH companies	LHR?	OK
3.2.	Flat heat meters	By decision of consumers, additional fee	DH companies	LHR?	OK
3.3.	Individual heat allocators	By decision of consumers, additional fee	DH companies	LHR?	OK
3.4.	Flat hot water meters	Obligatory	Water suppliers	LHR?	OK
3.5.	Heat allocation methods	Basic methods Individual methods	NR? Consumers	LHR?	?

3.6.	Operation and maintenance of internal house piping system	Monopoly for DH companies? Competition? Both methods exist	NR? -----	?	? ? OK
3.7.	Norms for consumption of domestic cold water	Applied when metering do not exist	NR	LHR?	OK
3.8.	Norms for consumption of domestic hot water	Applied when metering do not exist	NR	LHR?	OK
3.9.	Heat norms for heating	For heat allocation	NR	LHR?	OK
3.10	Heat norms for circulation	For heat allocation	NR	LHR?	OK

NC – existing National Commission for Regulation of Ukrainian Electricity Sector;
NR – new National Regulator for District Heating and Water Supply;
LHR – Law on Heat Regulation;
LCHP – Law on Cogeneration;
CHP – Cogeneration of Heat and Electricity;
DH – District Heating

Appendix 2

GUIDELINES ON HEAT PRICING

.	**Object**	**Methodology**	**Setting**	**Control Monitor.**	**P.s.**
1.	Heat pricing				
1.1.	Cost of heat generated in plants owned by district heating companies	GOU	NR	NR, municipality, consumer	Regulated
1.2.	Price of heat produced at the DH system as an indicator for competitive heat suppliers	GOU	NR	NR	Competition NR-dispute settle.
1.3.	Heat transmission price at the building-level heat meter (sale point)	GOU	NR	NR, municipality, consumer	Regulated
1.4.	Billing tariff as a component of the heat price	GOU	NR	NR, municipality, consumer	Regulated
1.5.	Additional fees for services provided individually to the buildings	Supplier	Supplier	Consumer	Individual agreement
2.	Hot water pricing				
2.1.	Price when heat and cold water purchased separately at the inlet to the building	NR	Municip., NR	NR, consumer	Lower price
2.2.	Price when hot water sold as a complex product to the flats	NR	Municip., NR	NR, consumer	Higher price
2.3.	Hot water sale (metering) tariff	NR	Municip., NR	NR, consumer	
2.4.	Hot water circulation fee	NR	Municip., NR	NR, consumer	
3.	Heat price differentiation				
3.1.	By municipal territories	NR	NR	NR, municipality	
3.2.	By district heating companies (operators)	NR	NR	NR, municipality	
3.3.	By district heating systems (for large size systems only)	NR	NR	NR, municipality	For transparency
3.4.	By fixed amount of heat delivered to consumer	NR	NR	NR, municipality	Social heat price
3.5.	Others				
4.	Service tariffs				
4.1.	Operation and maintenance of substations and piping systems inside the buildings	NR	Municipality	Consumer	
4.2.	Individual heat allocation among flats	Supplier	Supplier	Consumer	Individual agreement
4.3.	Renovation fee	GOU	Municipality	Consumer	
4.4.	Others				

GOU – Government of Ukraine;
NR – National Regulator for District Heating and Water Supply;
Consumer – individual consumer or consumer protecting organization;

COMMENTS ON DRAFT "LAW ON STATE REGULATION IN THE HOUSING AND UTILITIES SERVICES SECTOR"

Law on State Regulation in the Housing and Utilities Services Sector (LRH) covers three main activities:

1. Centralised cold water supply and sewerage;
2. District heating and hot water supply;
3. Administration of buildings and adjacent territories;

Additionally, district heating supply system is settled in a separate act "Law on Heat Supply", and other two sectors are not described in the separate documents. Basically, it would be better to have specialised laws for all three sectors where specific features are formulated and Law on Regulation which covers aspects of regulation system only. Generally, there are different legal structure in various countries.

Positive feature of LRH is introduction of economical regulation and clarification of responsibility of state institutions in the specified fields. At the same time, there are some unclear or missing statements but they might be included in the other legal acts.

Following comments deal with the regulation of district heating sector and related fields only.

1. Terms should be described in more detail – many disputes arise when regulation comes to separate building, individual house etc. Even a term "centralised" often described in different ways (one heat supplier and one heat consumer?);

2. Law does not separate pure monopolistic activities (heat transmission) from fair competitiveness (heat delivery by independent producers, administration of buildings, for example);

3. Regulator – National Commission (NC) should ensure methodologies for building services or this activity should be based on competition basis (Article 5). Small municipalities need assistance in ratification of these services;

4. Article 7 makes different regulation "with foreign investments" (discrimination?);
5. National Commission should establish all technological norms not only for potable water (Article 7) or this function can be allocated to other responsible institutions;

6. Article 12 should specify additional principals of pricing to exclude possibility to reduce artificially price level or delay price adjustment when unpopular decisions take place:

- structure (production, transmission, distribution, metering fee etc.,);
- price cap period;
- price adjustment frequency and criterion;
- price differentiation (by licence, by DH system, by territories of municipalities, etc.,)
- price for heat delivered to a building (common price) and payment for services inside building (individual fees?);
-

7. The payment principals for connections of new consumers and compensation of

disconnections are not clear;
8. The procedures for improvement of investment plans are not clear;

9. It should not be allowed to set heat price below an economic level except for the case when compensation for lost income has been approved;

10. Subsidies, donations etc., should be allocated per same amount of heat delivered to each consumer, but not per total amount;

11. Licensing conditions should be formulated in the Law;

12. Some missing answers to important issues of regulation:
- Can assets be privatised or leased only?
- What happens if a license has been withdrawn?
- No requirement for implementation of metering?
- What is a possibility to buy heat and water at the inlet to buildings by representative of consumers?

There are less disputes and conflicts with Regulator when rules and principles are fixed in the legal acts. There are fewer possibilities for interpretations and individual regulation resulting in predictable decisions and less space for corruption. Very unpopular decisions would be made by national regulator so principals of pricing and regulation should be included directly in the law as much as possible.

Basically if the Law on State Regulation is approved in the Parliament and basic statements efficiently implemented it would stabilise situation in the district heating sector and create preconditions for normal operation.

COMMENTS REGARDING INDIVIDUAL THERMOSTATIC VALVES

Experience in East European countries shows that individual regulation of heating by thermostatic valves and installation of heat allocators has limited effect in many cases due to the following reasons:

1. Heat for heating is allocated per m^2 of residential area mainly (Ukrainian case). No interest to regulate and save energy or must be introduced building level metering first;
2. Standard room temperature is only 18 ^oC – limited possibility to keep lower temperatures using thermostatic valves;
3. Internal walls are very thin usually and relatively high heat "migration" between separate apartments, poor people try to save energy using "neighbor' s" heat;
4. Installation of thermostatic valves require relatively high investment which could be utilized for higher priority energy saving means;
5. More efficient means which could be implemented in the multifloor buildings first:

- replacement of windows (partial compensation by the specialized state fund – good practice in Slovenia);
- installation of individual heat substations for regulation of heating regime for separate building;
- mandatory usage of hot water meters in the apartments;
- balancing of heating systems etc.

In my opinion, thermostatic valves should be considered as a part of total complex renovation in case of soviet type blockhouses.