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RESTRUCTURING AND REGULATING DISTRICT HEATING AND COGENERATION IN TRANSITION ECONOMIES

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Abstract

In summer 2004, the World Energy Council published a Study on "Regulating district heating and cogeneration in central and eastern Europe"², prepared by representatives from eleven economies in transition and two Nordic countries.

The Task Force analysed twelve regulatory issues, country-by-country, on an internationally comparable basis. Regulatory progress on the road to more efficient, profitable, competitive and service-oriented heat supplies was described. Common concerns were identified: the need for independence of the regulator from policy and industry, improved coordination between central and local regulators and between environmental and energy authorities, access to grids, and a "fair" sharing of CHP benefits among heat and electricity generation. Looking forward, the Task Force advocated a continued dialogue between decision makers, regulators, regulated industries and customers on

- the internalisation of DH/CHP benefits
- the future reduction of the density of regulation
- Joint implementation
- the compensation for public service obligations
- the elimination of old debt and stranded investments
- DH/CHP taxation
- privatisation
- the integration of DH/CHP in urban planning.

A concluding WEC workshop in Moscow in March 2004 addressed recommendations to policy makers ("Moscow Statement").

I. The Policy Framework

1. Non-regulated versus regulated restructuring

The Study does not advocate introducing straight away a self- or non-regulated, fully competition-driven organisation of the DH/CHP markets, with ex-post control by the anti-monopoly authorities. Seen the inherited monopolistic structure of the DH/CHP industries in the transition economies and their strong social obligations, such an approach is not considered realistic.

2. DH/CHP regulation - a lengthy, painful and diversified process

The Study insists on appropriate general energy policy frameworks, within which the regulation of DH/CHP would take place. All view these frameworks as evolving in response to progress on the road to economic, budgetary and social development. Low incomes are identified as the major obstacle to tariff and - hence - DH reforms. This means that DH/CHP regulations are embedded in a lengthy and painful process, implying a certain degree of uncertainty for the operators. It also means that there are differences between central and east European countries in terms of market-orientation and density of regulation, with accession countries closer to market-economy regulation than the others (see Graph overleaf).

3. Feedback on general energy policies

Vice-versa, experience with DH/CHP regulation prompts a constant feedback from regulators, regulated industries and customers to general energy policy makers. It is therefore not surprising that the Study calls for

a) strengthening market-oriented energy policies, implying liberalisation, full-cost tariffication, competition, investment incentives and, to some extent, but not necessarily, privatisation

b) an equal level playing field for all grid-based energies (heat, gas, electricity); this implies the elimination of subsidies granted to competing energy sources, the establishment of a common regulator, or stronger coordination, for all grid-based energies, and the harmonisation of liberalisation policies, particularly as regards electricity and CHP markets

c) long-term policies to enhance predictability for investors

d) urban energy planning based on least-cost planning and life cycle analysis

e) a stimulating attitude of governments towards DH/CHP, seen its environmental and resource saving characteristics; the Study advocates in particular the internalisation of the environmental benefits of CHP through investment incentives, tax relief, dedicated heat supply zoning, obligatory purchase of electricity produced during heat production,

f) accept DH/CHP regulation as a means to promote other energy, environmental and climate protection policies through the use of renewables and urban waste, but express reluctance to serve social protection policies without compensation.

II. Regulatory Issues

Regarding regulatory issues proper, the Study distinguishes four goals:

1. Enhance regulatory regimes

The Study highlights two issues: the independence of the regulator, and the balance between central and local regulation.

a) independence: securing the independence of the regulator from ad hoc interventions of policy makers (ministers, city councillors) is a major concern in all contributions. Independence does, of course, not mean that regulators are free of constraints: regulators have to operate within the framework defined by law and procedures. Nevertheless, the regulator should be protected against ad hoc interventions while implementing law. This is sought by placing the regulator under the authority of the Cabinet of Ministers or Parliament, and (while difficult) by separating the ownership and regulatory functions at the municipal level.

Progress so far (status Spring 2004)

country	unbundling DHC/CHP from electricity sector	establishment of a regulator	Municipalisation	reducing cross- subsidies	increased tariffs for captive customers	cost+ pricing for captive industrial customers	market pricing for industrial customers	budget allocation for the poor	elimination of producer subsidies	competition among DHC/CHP suppliers: regulated access to heat grids	profitability	investing into efficiency, metering, expansion, information technologies	privatisation, private-public partnerships	equal level playing field DH : gas CH : electricity	internalisation of external benefits	urban planning	reduced density of regulation
BG						↑											
CZ												↑					
LI												↑					
HR						↑											
MAC										↑							
LT												↑					
LAV												↑					
PL												↑					
RO				↑													
RU				↑													
SI																	↑
SK																	
S-TM		↑															
other		↑															
CIS																	

Independence can also be impaired by budgetary constraints, which in turn favours financing by the regulated companies rather than by public budgets. In one case study, the full dependence on the State budget has been questioned; another considered the financing of the municipal regulators as insufficient to safeguard competence and independence. Independence can also be impaired by the lack of expertise, which requires the build-up of a proper knowledge base by the regulators.

b) *cohesion/subsidiarity of national, regional and local regulation*: DH/CHP being a public service, local regulation would appear the appropriate solution, were it not for the resulting lack of a common direction (in small countries) and the temptation for local policy makers to intervene. The need, thus, arises to find a balance between general central and specific local regulation. The principle of subsidiarity (i. e. regulation at the lowest possible level) is advocated, requiring however a (central) definition of central, regional and local roles. Also, central regulation of CHP and local regulation of heat-only generation are advocated. Yet, the issue of independence of local regulators from local policy makers remains and has prompted one country, Poland, to establish nine regional regulatory offices for electricity, heat and gas under the authority of the central regulator.

Licensing, transparency of procedures, consultative mechanisms and dispute settlement have not caused concerns to the contributors.

2. Foster competition, facilitate access to district heating grids

The common thread in the contributions is the call for (unbiased) competition and access to grids:

a) *competition*: the Study strongly calls for the elimination of cross subsidies granted to competing sources (gas, electricity) and for the rescheduling or elimination of old debt and stranded investments resulting from public service obligation of the past. There is also consensus to reduce licensing barriers to facilitate the market entry of new generators. Generally, heat supply should become demand-driven, rather than supply-driven.

b) *access to heat grids*: in DH/CHP regulation, unlike the electricity and gas sectors, the unbundling of grids from generation in accounting or ownership terms is not practised. Grids remain under the control of the owner-generator or distributor. Various approaches to facilitate access of new generators to grids are advocated: regulated third party access via license, preferential access for CHP, or a single buyer solution whereby the grid owner is obliged to buy and sell cheaper third party offers, according to their economic merit. These approaches reflect the basic difficulty in DH/CHP of enabling competition among few generators, and of different market power.

c) *access to electricity grids*: supply of excess electricity from CHP into electricity grids is now favoured by policy everywhere, but hampered by conflicting interests of grid operators and transmission/distribution companies (requiring high charges for connections and back-up; battling with overcapacities).

3. Secure cost-covering, market-oriented prices, tariffs

The modernisation/rehabilitation of DH and particularly CHP systems results in considerable energy savings and cost reductions, - hence stabilises demand affected by demand side management. It enables new demand to arise. In this regard, the Study focuses on two concerns related to prices: enabling "cost +" pricing and, in CHP, enabling a fair allocation of overheads to heat and electricity generation.

a) *"cost +" pricing*: the emphasis in the country case studies is (still) on "cost +" pricing, as not everywhere do regulated tariffs for captive customers cover the cost. The regulators are, therefore, called upon to apply transparent pricing methodologies and to set tariffs for captive customers allowing provisions for investments, stranded costs, R & D, old debt or external benefits. The bottleneck on the road from cost+ pricing to market-oriented prices is the perceived inability of many household customers to pay market-based prices. The preferred solution to this dilemma consists of supporting low-income customers from public budgets, while eliminating price caps and other constraints on the pricing policies of the DH/CHP industries. It is argued that progressing along these lines would enable privatisation and foreign investments while protecting the poor;

b) *CHP overheads*: as electricity markets have been liberalized before CHP markets, competition in those markets induces CHP generators to charge overheads to heat customers rather than to electricity customers. This time lag between two liberalization processes disadvantages DH 3 as do subsidised gas prices with regard to DH.

4. Enhance the competence and interplay of stakeholders

As the rules of the game have changed, so have the roles of the various players. The Study suggests that

a) *environmental administrations and municipalities should* acquire more competence in the field of DH/CHP or to desist from regulatory responsibility; relations among different State bodies should be formalised;

b) *generators should* behave as commercial entities: shedding capacities or investing as the case may be; entering or not in building or facility management; arbitrating investments into extensions, rehabilitation of networks and substations, and information technology; engaging or not in joint implementation and emission trading; surveying customer relations and new (DH cooling) markets; developing industry associations to deal with policy bodies, the public at large, or media; raising the competence of personnel;

c) *captive customers should* not be granted special rights. The Study prefers that supplier-customer relations be based on standard commercial contracts, with clear rules for disconnections and sanctions for a breach of contract either side. Conflicts should first be brought before civil courts or the regulator if so authorised by law. The possibility of customer representatives sitting on utility boards was mentioned;

d) *conflicts between the regulator* and regulated industry require a special arbitration procedure.

III. Open Questions

1. The future reduction of the density of regulation

Ideally, the density of regulation - growing in the first years - should decline in the longer term as the improved macro-economic context allows for more self-regulation. Thus, for example, heat tariffs could be approved for more than a year. Licensing for new entrants could be discontinued. Tariff setting by the regulator could be abandoned in favour of a compulsory pricing methodology. Reporting and monitoring could be standardised and reduced. The regulatory regime could be reviewed after a number of years.

However, apart from complaints about "bureaucracy" and "cost", a reduction of the density of regulation has not been generally advocated in the various contributions to the Study. Is this a reflection of a "culture" of central administration in central and eastern Europe, an oversight, or scepticism into the capability of transition markets and institutions to evolve towards markets?

2. Auditing the regulator

The activity of the regulator is formally reviewed by policy bodies (the Ministry, City Council, Parliament). Is there a need for an "independent" and competent auditing by "the like", i. e. by a peer review (such as done by the International Energy Agency with regard to energy policies of member countries)? Or by public hearings? Against a code of conduct or best international practices? Could the performance of regulators be benchmarked?

3. Compensation for public service obligations

The contributions do only indirectly address the issue of compensation for public service obligations (protecting the poor, mitigating climate change, promoting renewables, supplying heat even if not paid). It is not controversial that the legislative bodies define such obligations. The issue is whether the DH/CHP industries are correctly compensated for such services and whether market-based mechanisms could not replace command-and-control mechanisms to achieve the same goals more cost-effectively.

4. Asymmetric information

There is a striking "bias" in the country case studies concerning the independence of the regulator. The risk is primarily seen to emanate from policy makers. The risk of depending on utilities - be it alone for data and competence - is not addressed. This risk is particularly evident during the elaboration of transmission and distribution codes. Is this "oversight" an indication of the growing mutual dependence/collusion of regulator and regulated industries inherent in any branch- or sector-specific regulation? To the detriment of customers?

5. A continued stakeholder dialogue

As a rule, regulators have well associated generators and customers with their work via official journals, web sites and consultations. The Study advocates that this dialogue be continued on questions such as

- complying with, or approximating, EU practices and standards so as to attract for

Policy framework

- regulatory discrimination between grid-based energies
- regulatory independence in terms of reporting, financing and expertise
- consistency/subsidiarity of national, regional, local regulation
- competition among generators and access to grids
- cost + pricing methodology and tariffication for captive customers
- regulatory density and cost
 - reduce/standardise reporting and monitoring requirements
 - soften/eliminate licensing requirement for new entrants
 - approve tariffs for extended periods
 - move from cost + pricing to market pricing
 - replace tariff setting by compulsory pricing methodology
- international compatibility (appealing to investors)
 - comply/approximate EU practices and standards
 - consider peer review of regulatory practice
 - develop international DH/CHP statistics
 - compare practices of sharing CHP overheads between heat and
- feed-back to policy makers so as to
 - secure equal level playing field with competitors (gas and electricity)
 - improve cohesion/competence of state bodies intervening in DH
 - reduce old debt, compensate for public service obligations
 - internalise external benefits of DH/CHP
 - review regulatory regimes after a number of years
 - promote urban planning

eign investors

- merging or better coordinating separate regulators for electricity, gas and heat
- internalising external benefits of DH/CHP into tariffs, taxes, investment incentives

tives

- eliminating cross-subsidies and subsidies for competing fuels
- eliminating old debt and stranded investments
- compensate for public service obligations
- applying the principle of subsidiarity of national, regional, local regulation
- enhancing the competence and coordination of the various State bodies intervening in DH and CHP

ing in DH and CHP

- defining methods of allocating overheads in CHP
- promoting expertise for local energy planning
- developing international indicators on DH/CHP capacities, supplies, grids, fuel use, efficiency, transmission/distribution losses
- and gradually reducing regulatory density and cost.

This dialogue would greatly benefit from experience gained in northern and western Europe.

References

¹ The World Energy Council is a global, non-governmental and non-commercial association of energy producers, traders, customers and researchers in 96 countries, aiming at securing sustainable energy supplies for the benefit of all; for information, see www.worldenergy.org

² World Energy Council; Regulating district heating and cogeneration in central and eastern Europe, London 2004; info@worldenergy.org

³ for a discussion of cost allocation in distorted markets in the economies in transition, see Carolyn Gochenour, World Bank Regional Study on Regulation of Heat and Electricity Produced in Combined-Heat-and-Power Plants, Washington 2003, p. 37 ff

"Moscow Statement"

resulting from the WEC Workshop on

Regulating District Heating and Cogeneration in Economies in Transition: Policies and Regulations

Moscow, 23 March 2004

District heating (DH) based on combined heat and power generation (CHP) is one of the most efficient and environmentally friendly technologies of heat supply in urban areas with high heat density. Further development of DH systems using renewables enables also the long-term sustainability of heat supply.

District heating and combined heat and power should prove viable under market economy conditions, within a regulatory framework conducive to the development of DH and CHP.

To assure such a development, decision makers are invited to consider the following:

1. DH and CHP shall be one of the priorities in long-term urban energy planning.
2. Regulatory bodies shall be independent acting according to law.
3. Regulators should assure equal treatment for all kinds of grid-based energy supply (gas, electricity, district heating).
4. District heating companies shall be self-financing entities, covering all cost, and profitable.
5. The pricing methodology shall reflect all justifiable costs (variable and fixed).
6. Tariffs shall stimulate the efficiency of district heating systems as a whole.
7. Incentives for promoting CHP and/or renewables shall be set in such a way that heat prices remain competitive.
8. Incentives for investments in new CHP shall enable payback periods attractive for investors.
9. Social issues (protection of low income customers) shall be dealt with under

government or local social security programmes.

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