

The Roles of The System Operators and The Regulatory Authorities in The First Years of Liberalized EU Natural Gas Market

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Abstract: The market introduction following EU directives has resulted in changed roles of the transmission and distribution system operators, the regulatory authorities were established and started their operations. The legal framework has been modified, the regulatory framework introduced. Some experiences on the market functioning within the first years after its introduction, are discussed in the paper, and some thoughts on potential measures and activities, which may contribute to improved functioning and competitive gas market, as well as to the security of supply, are presented.

Key – Words: energy, natural gas, market liberalization, regulatory authority, supply, transmission system operators, distribution system operators, transmission of natural gas, distribution of natural gas

1 Introduction

Adoption of the directive on common rules of the internal market in natural gas 98/30/EC [1], so called first gas directive, caused the gas supply transform from a public service to a market based supply by use of public services, i.e. network related services which are natural monopolies. Therefore these public services have to be available to all market participants under transparent and non-discriminatory conditions.

According to the first gas directive the eligible customers were granted the right to network access and hence to choose their supplier. The directives enabled the EU member states to opt for different modes of network access, unbundling, and allowed partial opening of the markets, the eligibility threshold decreased in a prescribed dynamics. Implementation of the first directive lead to several heterogeneities in the market, so the understanding prevailed that full market liberalization is needed together with a higher degree in unbundling and compulsory network service regulation.

The enforcement of the second gas directive concerning common rules in the internal market in natural gas (2003/55/EC, [2]) introduced all these,

and defined the roles of the regulatory authorities, or regulators, their main responsibilities and their competences. The enforcement of the regulation on the access to the transmission networks in natural gas [3] contributed to market functioning as well. The roles of the TSOs and DSOs has changed at the market introduction, whereas the role of the regulators developed much stronger and considerably supported the market introduction and its functioning.

2 Liberalization of the natural gas market and the crucial roles

Market liberalization is characterized by opening of the market in supply, i.e. leaving the market activities, like trade and supply, and commodity, like natural gas, to the market mechanisms, and apply strict regulation the network services.

The market opening was not homogeneous over the EU. In the two, for market development crucial years 2003 and 2004, the market was opened as shown in the Table 1.

Table 1: Evolution of market opening

EU member state	2003		2004	
	Degree of market opening in %	Eligibility threshold, annual consumption in mcm	Degree of market opening in %	Eligibility threshold, annual consumption in mcm
Austria	100	-	100	-
Belgium	83	5	90	- in one region, non HH in others
Denmark	100	-	100	-
France	37	8	70	Non HH
Germany	100	-	100	-
Ireland	85	0.5	86	0.5
Italy	100	-	100	-
Luxemburg	72	15	72	15
Netherlands	60	1	100	-
Spain	100	-	100	-
Sweden	51	15	50	15
Great Britain	100	-	100	-
Estonia	80	Industry	95	Non HH
Latvia	0	-	0	-
Lithuania	80	15	70	1
Poland	34	25	34	15
Czech Republic	0	-	0	-
Slovakia	33	25	34	15
Hungary	0	-	69	Non HH
Slovenia	50	25	91	Non HH

HH: households; mcm: million m³

The market was introduced to support:

- reconstruction the relations in the supply chain to ensure long term security of supply and balance of demand and supply,
- customer protection and benefit from the competition and reducing the state influence through introduction of independent regulatory authorities,
- encouraging private investments into the sector,
- some other goals.

In general, the first years of market functioning have shown positive effects, however mid- and long-term effects, both benefits and deficiencies, remain to be weighted in the future.

Some individual, state tailored solutions evolved, that reflect developmental, historical, economic characteristics of the member states and their individual energy sector characteristics and energy policies and strategic directions. Although consequent realization of the directives is required from the member states, restructuring of the sector has proved to be more efficient if prior to privatization.

After the adoption of the directives and their implementation into the national legislation of the

member states, the implementation phase is characterized mainly by some side effects:

- in many member states a deviation from the degree of the declared market opening is observed, accompanied by various barriers for new, suppliers to entry the markets,
- the incumbents try to maintain their market shares,
- not in all member states the network prices were defined or approved autonomously by the regulatory authorities,
- in some member states a regulated tariff supply exists in parallel to the open energy market.

Deficiencies of the internal gas market functioning were shown already by the preliminary report on the sectoral enquiry, undertaken by the European commission, DG COMP, in 2005, and presented in 2006 [4].

Some suppliers claim that only well balanced relations and risk in the whole supply chain will enable investments to use gas from distant layers to prevent shortages.

2.1 The role of the gas transmission undertakings

Gas transmission is an activity, which has the characteristics and the importance of a public service, and due to the networks being natural monopolies, a regulated activity.

The role of the transmission system operator (TSO) is crucial for the supply, security of supply, and operation of both transmission and distribution networks. The responsibility of the TSO is operation and development of the transmission network, ensuring interoperability with the neighbouring systems and balancing at the system level. The second market directive specified the main role of TSOs, and required unbundling from other activities.

During the first years after the market introduction, some EU member states introduced negotiated access, among them Germany, The Netherlands and Slovenia. This period also has shown large differences between member states in the roles of the TSOs, particularly in operation, scheduling, balancing, granting network access. The main difference, however, was in the way how and to which extent the incumbent companies, typically including the main TSO, unbundled the network from the market activities.

The minimal degree of unbundling, i.e. account unbundling, enabled over the first years of market functioning, in some cases, maintaining the incumbents' positions on the market. This also led to information asymmetry between the market participants.

Table 2 shows the level of unbundling in two characteristic years, 2003 and 2004.

Table 2: Evolution of transmission unbundling

EU member state	2003	2004
	Level of unbundling	
Austria	legal	legal
Belgium	legal	legal
Denmark	ownership	ownership
France	account	legal
Germany	management	account; some legal
Ireland	management	management
Italy	legal	legal
Luxemburg	management	management
Netherlands	management	legal
Spain	legal	legal
Sweden	account	account
Great Britain	ownership	ownership
Estonia	n.a.	account
Latvia	legal	account
Lithuania	account	account
Poland	account	legal
Czech Republic	account	none
Slovakia	legal	management
Hungary	legal	legal
Slovenia	account	legal

The incumbent companies typically dominated the wholesale markets, particularly in the first years of the liberalized markets, and they usually also owned the transport infrastructure. And in cases of account-unbundled TSO, the market was, for new participants, difficult to enter.

Enforcement of the second gas directive substantially changed the role of the gas transmission companies. Together with the required higher level of unbundling from market activities, the TSOs perform a regulated public services and play a crucial role in investment plans and decisions at state level and in interoperability.

2.2 The role of the gas distribution undertakings

Gas distribution has in most of the member states the characteristics of local public service. Before market liberalization started, they were frequently carried out by municipalities together with other public services, or by public undertakings, which

had local concessions and herewith monopolies in gas supply within their territories.

These relations were modified by enforcement of the first, and particularly by the second gas directive which requires to unbundled the network services from supply activities. That still allows very small utilities, serving less than 100.000 customers, to remain within the same entity and undertake network services as well as supply. Concession agreements, however, had to adapt to the new market conditions. This means, in particular, the territorial limits may remain valid for the public services only, i.e. network services, whereas the supply business is a market activity and cannot be regulated for the eligible customers.

The role of the distribution companies since liberalization is different, except in special cases, split into different legal entities.

The supplier, either separated or the remaining part the previous company, supplies natural gas to the customers, from the market point of view, these suppliers are retailers. Even though the customers may choose their suppliers, vast majority of them, at least in the first years after market introduction, remain with their local supplier. Therefore the role of the local supplier, even though not exclusive within a territory, remains dominant within a territory. As a rule, the local communities also had significant influence to the gas distribution, and some of it has remained.

The role of the distribution system operators (DSO) is to provide network services; the network access is to be regulated and, in the spirit of the directive, network charges determined or approved by the competent regulatory authority

2.3 The role of the regulatory authorities

The first gas directive foresaw relevant authorities in the member states to regulate network services, but their role was heterogeneous over the first years. The role of these authorities was set by the second directive [2] and by the regulation [3]. They may be applied so that the regulators:

- directly or indirectly determine or approve network charges;
- approve several codes of the system operators and regulates operation of those operators in several aspects,
- monitor unbundling of public services from market activities,
- resolve disputes, resulting from network access, connecting to networks, and related services,

- monitor the market, report and have some other tasks.

The role of the regulatory authorities is even after the enforcement of the second gas directive different throughout different member states, e.g. in relation to how their decisions are enforced.

The role of the regulatory authorities is balancing of interests: the state at one side, the owners of undertakings and infrastructure at the second, and the customers and their suppliers at the third side Figure 1. The regulators execute their competences and responsibilities, listed above, to balance these interests in the best possible way to contribute to stable conditions in the market and sustainable environment for investments into the infrastructure and its operation.

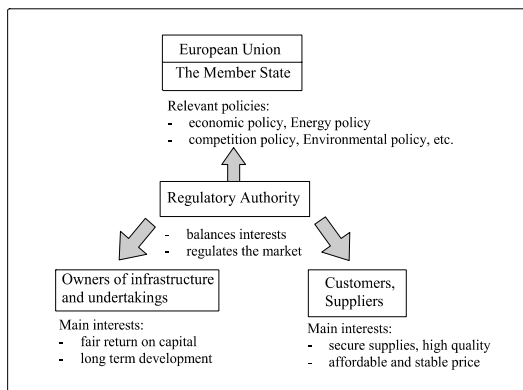


Figure 1: General role of the regulatory authority at the state level

In relation to gas distribution, the role of the regulatory authority and the local community can be presented as in the Figure 2.

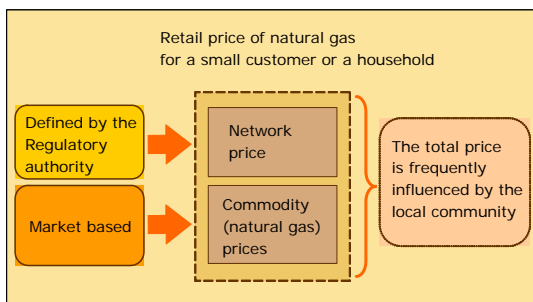


Figure 2: General role of the local community and the regulatory authority at the local level

3 Conclusions

The presented research led to the following findings presumptions:

- Liberalization considerably changed the existing arrangements, the producers face larger risks, which leads to price increase and may decrease security of supply in the markets, due to lower availability of gas.
- Additional quantities will be needed in the EU markets, partly from distant sources, for which considerable investments are needed, and will only be possible within an arrangement which share the risk in a balanced way among the participants in the supply chain over a longer period.
- A clear policy both, at EU and at the state levels is needed to support the needed investments and operation of the new pipelines to prevent a shortage in the EU around the year 2030.
- At the national level, regulatory authorities will play a crucial role in market monitoring and in regulating the infrastructure pricing. They will significantly influence the investments, decisions on investments and quality of services and supplies. The regulatory authorities also take consideration of the wider economic environment.

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