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APPLICATION OF NEOLIBERAL THEORY IN THE ENERGY SPHERE OF UKRAINE IN A POST-CRISIS PERIOD

Neoliberalism is a label for economic liberalism or (in older terminology) "Laissez-faire". The term "Neoliberalism" came into use in the 1960s by Marxists. The term refers to economic policies based on neoclassical theories of economics that minimizes the role of the state and maximizes the private business sector. The term is most often used on the left to criticise the policies and ideologies of modern governments and leading international economic institutions.

"Neoliberalism" is a term used by opponents of the policies; supporters prefer terms like "free market" or "liberal trade."

Policy implications

Broadly speaking, neoliberalism seeks to transfer part of the control of the economy from public to the private sector, under the belief that it will produce a more efficient government and improve the economic health of the nation. The definitive statement of the concrete policies advocated by neoliberalism is often taken to be John Williamson's "Washington Consensus," a list of policy proposals that appeared to have gained consensus approval among the Washington-based international economic organizations (like the International Monetary Fund (IMF) and World Bank). Global spread.

Chronic economic crisis throughout the 1980s, and the collapse of the Communist bloc at the end of the 1980s, helped foster political opposition to state interventionism, and in favor of free market reform policies. Changes occurred from the 1970s to the 1980s. Started off with most of the democratic world governments focused primarily on the primacy of economic individual rights, rules of law and roles of the governments in moderating relative free trade. It was almost considered national self determination at the time.

The instruments of neoliberalism as good as possible can have application for the exit of Ukraine from an economic crisis. Observing in particular power industry, it follows to notice that the instruments of neoliberal policy used the governments of the European countries and Russia.

To investigate the possibility of using instruments of neoliberalism in the energy sphere of Ukraine, it is necessary to study foreign experience. Optimally display energy sphere of Ukraine examples of countries-neighbors, which joined the European Union, and gradually began to reform the energy sector.

Energy liberalization in the European Union

Energy liberalization in the European Union (EU) is occurring as a result of Directives, and policy papers and national initiatives, though this liberalization is occurring inconsistently and at various paces in the different member states. Energy liberalization is also being implemented in the context of initiatives to encourage renewable energy and energy efficiency.

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The reform of EU energy markets

Industries and private households are in theory able to freely choose their energy supplier following the entry into force of EU directives in 2004 and 2007, but many obstacles remain, with a single European energy market still far from reality. To make up for the shortcomings, the European Commission has made further legislative proposals, including controversial plans to separate the production and distribution arms of large integrated energy firms such as France's EDF and Germany's E.ON.

Milestones of the EU energy market liberalization

July 2004: Industrial market opens up to competition.

10 Jan. 2007: Commission issues progress report on the internal energy market and final results of a competition enquiry which confirmed "serious problems" in the liberalised gas and electricity markets.

8-9 March 2007: EU Summit adopts conclusions on energy liberalisation, calling for:

Full implementation "in letter and spirit" of existing EU directives, and;

"effective separation of supply and distribution activities from network operations (unbundling)".

July 2007: Household market opens up to competition.

19 Sept. 2007: Commission presented its 'third liberalisation package' (EurActiv 20/09/07)

23 Nov.: Commission delivers impact assessment on the Internal Energy Market package.

May 2008: Vote in Parliament's Industry (ITRE) and Internal Market (IMCO) Committees (EurActiv 07/05/08).

6 June 2008: Energy Council reached broad political agreement on the Commission's third liberalisation package.

Mid-June 2008: Vote in Parliament plenary (first reading) (EurActiv 19/06/08).

12 Jan. 2009: EU Council of Ministers adopts common position on third energy liberalisation package.

23 March 2009: Parliament and Czech Presidency reach agreement on the third energy package (EurActiv 25/03/09).

22 Apr. 2009: Parliament endorses compromise agreement (EurActiv 23/04/09).

25 June 2009: Council adopts internal energy market package.

The first electricity and gas directives were adopted in the late 1990s, with the objective of opening up the electricity and gas markets by gradually introducing competition. The Commission has consistently argued that liberalisation increases the efficiency of the energy sector and the competitiveness of the European economy as a whole. But a number of stakeholders and member states, notably France and Germany, vehemently disagree with this assessment.

While most member states had implemented the electricity and gas directives by September 2000, a 2001 Commission inquiry concluded that further measures were necessary in order to complete the internal energy market and to reap its benefits.

The second gas and electricity directives, adopted in June 2003, include 'un bundling', whereby energy transmission networks have to be run independently from the production and supply side.

According to the directives, markets for all non-household gas and electricity customers are to be liberalised by July 2004. For private households, the deadline is July 2007. After these dates, businesses and private customers would theoretically have been able to choose their power and gas suppliers freely in a competitive marketplace.

But a competition enquiry in the electricity sector, published in January 2007, revealed some "serious malfunctions" in the market for industrial consumers (EurActiv 11/01/07).

For example, market concentration still reflects the 'old' market structure, characterised by national or regional monopolies - usually dominated by vertically integrated companies - which control electricity prices in the wholesale market and block new entrants to the market. In the gas sector, "incumbents tend to control imports and/or domestic production," according to the Commission.

Corrective action was promised by the EU executive, which tabled a further package of proposals in September 2007. After long negotiations, the Parliament and the Czech Presidency struck a compromise deal on the legislative package on 23 March 2009.

The Commission put forward its 'third energy package' on 19 September 2007. The package provided companies in the member states with two options for separating gas and electricity production from supply provision. A third option was later added at the insistence of France and Germany.

During the negotiations, the issue of unbundling emerged as the biggest bone of contention between the Parliament and governments, as MEPs insisted on full separation of production and transmission assets as the only option for the electricity market. The final compromise offers companies all three options.

1. Ownership unbundling

Under the Commission's preferred option, companies that control both energy generation and transmission would be obliged to sell part of their assets. Investors would be able to keep their participation in the dismantled groups via a system of 'share-splitting', whereby two new shares are offered for each existing share.

"This does not mean that a person or company cannot hold shares in both a network operator and a supply undertaking," the Commission explained. "For example, an individual investor […] could still have a minority stake in both supply undertakings and network operators." However, this would be only allowed "as long as these shares represent a non-controlling minority interest".

2. Independent System Operator (ISO)

The ISO option was a Commission compromise proposal whereby companies involved in energy production and supply would be allowed to retain their network assets, but would lose control over how they are managed. Crucially, commercial and investment decisions would be left to an independent company (ISO), to be designated by national governments with the Commission's prior approval, to ensure a sufficient level of independence.

Regarding the question of ownership, the ISO option was also designed to fend off criticism that the Commission is trying to privatise energy utilities such as EDF. "It is up to each country to decide if the transmission network is privately or state-owned," said a Commission official, "but they have to prove that they are completely independent from the state".

During the negotiations, it emerged that the ISO option was unattractive to many member states, with most opting for full unbundling or the 'third option' (see below).

3. Independent Transmission Operator (ITO)

EU ministers introduced the so-called 'third way' in response to the successful efforts of France and Germany to build a coalition against full unbundling. They obtained the right for former state monopolies - such as EDF and GDF in France and E.ON and RWE in Germany - to retain ownership of their gas and electricity grids, provided that they are subjected to outside supervision.

Like the ISO option, the ITO model allows integrated companies to retain ownership of their gas and electricity grids. However, they would have to give up daily management of the grids to an independent transmission operator.

Crucially, companies can retain commercial and investment decisions, but will have to set up a framework for ensuring the independent operation of the transmission network by:

- setting up a supervisory body made up of company representatives, third-party shareholders and representatives of the transmission system;
- agreeing a compliance programme setting out measures that prevent the ITO from discriminating against suppliers using the grid;
- appointing a compliance officer with powers to ensure non-discrimination, and;
- introducing a mandatory cooling-off period for management staff who move between the supply and generation company and the transmission operator.

More powers for national regulators and new EU agency

A lack of coherence in the powers and remits of national energy regulators was identified as one of the biggest hurdles in creating a functioning EU energy market. The third liberalisation package aims to resolve this by:

- harmonising and strengthening the powers and duties of national regulators so that they are able to issue binding decisions on companies and impose penalties on those that fail to comply;
- ensuring that all national regulators are truly independent of industry interests and government intervention, meaning that they will have authority over their own budgets and that strict rules apply for management appointments, and;
- mandating all national regulators with a binding requirement to co-operate with each other.

Co-operation between national transmission system operators (TSOs) for gas and electricity, which currently only takes place on a voluntary basis, will be formalised through the establishment of a European Network for Transmission System Operators. The purpose of the network is to harmonise standards for pipeline and grid access, and co-ordinate and ensure proper network planning and investments in order to prevent blackouts.

A new European agency will also be created to oversee and improve cross-border regulatory cooperation for gas and electricity transmission between member states. The agency would not have any direct regulatory authority at national or European level, but it would have the power to intervene in the event that national regulators fail to cooperate effectively.

Reciprocity clause

Under the agreed text, all non-EU countries will be required to comply with the same unbundling requirements as EU companies before they are certified to operate in the common market. Moreover, member states must refuse certification if it is deemed to "put at risk the security of energy supply of the member state and the Community".

When introduced by the Commission, this so-called 'reciprocity clause' was widely interpreted as being directed at the Russian state-controlled energy giant Gazprom, which is seeking to increase its share of the EU market (EurActiv 20/09/07).

The clause gives sufficient scope for member states to decide whether to let a third-country company enter its market, acknowledging that member states have the right to "national legal controls to protect legitimate public security interests".

The clause has caused consternation in Moscow, and the EU and Russia have agreed to set up a new expert group to discuss the matter.

The European Commission has made clear that it favours splitting up energy firms' production and distribution activities as the best way to ensure fair competition and lower prices for consumers. Speaking in February 2007, Competition Commissioner Neelie Kroes said full 'ownership unbundling' would solve the "inherent conflict of interest" that she says inevitably occurs when incumbents are told to grant access to their network to new competitors entering the market. Their self-interest, she said, is to impede access in order to protect their market share.

However, a majority of member states, led by France and Germany, have so far rejected the Commission's calls, saying that splitting up energy firms "is only one of a number of measures for accelerating the dynamics of competition". In particular, unbundling "is not a cure-all", said Germany's Economy Minister Michael Glos in a statement following a meeting of EU energy ministers in June 2007 (EurActiv 7/06/07). The UK, Denmark and the Netherlands, on the other hand, are active promoters of 'ownership unbundling'.

Eurelectric, the union for the EU electricity industry, says the liberalisation process has brought "considerable benefits" to Europe in terms of price and cost reductions as well as labour productivity gains. However, Eurelectric believes that it is vital to maintain the momentum and reinforce trust in the liberalisation process.

In particular, the power industry calls for the full and effective implementation of the liberalisation package by member states. Moreover, it says that regulation should be completed with guidelines on congestion management, harmonisation of transmission tariffs and a compensation mechanism for transmission system operators (TSOs).

The association of European Transmission System Operators (ETSO) has also called on member states to fully implement the electricity directive. In addition, ETSO says member states should ensure the provision of adequate electricity generating capacity to meet demand.

ETSO argues for consistent (although not necessarily identical) regulatory principles and practice between member states in order to promote the development of the internal market and economic efficiency. It also encourages the Commission to put in place draft guidelines on cross-border trade and congestion management.

The European Chemical Industry Council (Cefic), which claims to be the largest energy consumer in the EU manufacturing sector, said: "Progress in opening up markets […] since the entry into force of the liberalisation directives has been disappointing and small."

Cefic thus calls for "rigid and coordinated actions from the European Commission, member states, regulators and producers" to remedy the situation. It also points out that lack of liberalisation in the electricity market allows power utilities to pass on the additional costs entailed by compliance with the EU CO2 emissions trading scheme (ETS).

It says the scheme offers electricity utilities the potential to pass on all or part of the 'market price' of [CO2] allowances to electricity consumers by increasing power prices. Cefic warns that this unintended consequence of the ETS is damaging the EU's international competitiveness, especially for energy-intensive industries.

The metal industry trade association Eurometaux also says liberalisation has not prevented electricity prices from rising. As a consequence, Eurometaux says that the metal industry, which is a heavy consumer of electricity, has experienced a sharp deterioration in its competitiveness. "Plant closures and disinvestments have already been announced, attributable primarily to this unaffordable cost of electricity," it points out.

In Eurometaux's opinion, this situation is caused by distortions in the ill-functioning European electricity market. Electricity producers, it says, have adopted commercial practices allowing them to indicate prices that do not reflect cost fundamentals. Producers, it argues, have created the illusion of competition through wholesale trading, but in reality, the large producers continue to dominate the market.

"The current power-exchange model should be replaced by a true market design that allows cost fundamentals to be properly reflected and gives equal weight to all market participants," it says. Eurometaux also stresses the importance of freeing up existing capacity and opening markets to new entrants.

The European Federation of Public Service Unions (EPSU) says that the Commission's approach to energy liberalisation "contradicts the need for an energy policy that ensures more independence and is focused on achieving sustainable development."

EPSU Deputy Secretary-General Jan Willem Goudriaan notes that "serious issues of employment loss (300,000 over the last ten years), the emergence of a lack of qualified staff or the impact of competition on vulnerable users have not been addressed. More competition will not bring more investment to a sector that needs a very stable framework, not a policy that has a yo-yo effect. The result will be higher prices and a serious impact on all users."

The European Renewable Energy Council (EREC) calls effective competition in the European power markets a "myth". According to EREC, unless the existing distortions in the conventional energy markets are overcome, there will be no effective internal market for renewables to compete in. In addition, EREC criticises current unfair market conditions which favour conventional energies, such as through the Euratom treaty or failure to apply the 'polluter pays' principle.

Key measures of the EU Energy Directives

1 Vertical unbundling

A central element of the EU policy is to rule out the possibility that a firm which controls the whole value chain can preclude other firms from entering the market by denying them access to network infrastructure. To achieve this, all member states are obliged to unbundle the vertically integrated firms that operate in their energy sectors. Initially, the directives allowed for 3 possible forms of unbundling:

1) Separation of accounts;

2) Legal separation of business units into different firms; or

3) Ownership change.

In principle, vertical unbundling reduces potential barriers to competition and promotes transparency in the energy sector. Theoretically, the more activities are unbundled from a vertically integrated monopoly the more this will stimulate competition. However, excessive governmental intrusion into the firms' property structure and operation is technically difficult to implement and – even more important – conflicts with other EU legislation such as protection of private property. Hence, to limit the scope of governmental intrusion, unbundling obligations are limited to the most important potential barriers to competition, the operation of transmission and distribution networks as well as gas storage facilities. As initial minimum requirement the directions established that those operations had to be conducted within separate accounts. In 2003, requirements were further tightened by demanding at least legal unbundling.

2 Third Party Access (TPA)

The second cornerstone of the EU energy policy is to allow for access of third parties to transmission and distribution networks in order to remove possible bottlenecks for competition and to create a level playing field for all market participants. In general, the EU commission has defined two different possibilities of how individual member states can ensure third party access (TPA) on their national markets:

- Negotiated TPA foresees that third parties can negotiate the terms and conditions of network access with the system operator, who is required to publish an indicative range of prices for network access based on average prices agreed in negotiations during the previous year;

- Regulated TPA means that terms and conditions of network access are under the control of a regulatory body, which is independent from all market participants.

Initially, the directives allowed national governments to choose one of the two options to guarantee TPA on their national markets. Since 2003, the EU Commission requires Member States to provide regulated TPA.

3 Market opening

A necessary condition for the creation of a competitive market is that consumers can freely choose their suppliers of gas and electricity, which requires the creation of a level playing field for incumbents as well as new entrants. To achieve this, the directives oblige EU Member States to authorize all relevant activities such as transmission, distribution, supply, storage or generation in accordance with objective, transparent and non-discriminatory criteria, e.g. by license, permission, concession, consent or approval[1]. Moreover, Member States are required to create conditions that allow consumers to switch their suppliers, including specification of contract details and duration, definition of contract termination procedures including prohibition of additional charges etc. Finally, market opening also requires that network access (TPA) is sufficiently guaranteed.

Since at the time when the directives were issued, energy markets of all Member States were rather closed and authorization procedures were not subject to objective criteria, a stepwise opening process was foreseen, starting from generation and wholesale market activities and then gradually moving forward to retail supply. As a benchmark, Member States were required to open up energy markets for non-household consumers by 2004, and for all consumers by 2007.

4 Interconnection

The objective of creating a single internal energy market requires the possibility for cross-border flows of electricity and gas in order to link different national markets and to create competitive pressure on incumbent firms through imports. To achieve this objective, the EU Commission requires countries to coordinate their activities in congestion management, as well as to harmonize legal, institutional and technical barriers to cross-border flows such as different norms and standards or business rules and contract types[2]. As a benchmark, the commission requires that the interconnecting capacity of each member state should be at least 10% of the country's domestic consumption. Regulatory bodies are required to monitor the necessary harmonization of cross-country trade.

Two separate EU regulations for electricity and gas specify the requirements for stimulating interconnection between different national networks[3]. They foresee inter alia that capacity of electricity interconnectors has to be sold through transparent auctions, as well as the harmonization of congestion management and balancing mechanisms of network system operators.

Poland energy markets and liberalization

In September 1996, Poland first approved guidelines for implementing reforms in the energy sector. These guidelines establish an energy regulatory authority and allow third party access to the Polish electricity transmission grid. The objective was to create a competitive energy

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[1] If Member States decide to apply tendering procedures for new electricity generation capacity the directives again require the same objective, transparent and non-discriminatory criteria.

[2] In countries such as Germany where e.g. electricity markets are even regionally fragmented, interconnection requirements not only concern cross-country but also interregional flows between different network system operators.

[3] 24 Regulation 1228/2003/EEC on cross-border trade in electricity and regulation (EC) 1775/2005 on access conditions to the gas transmission network.

market through the privatization of the energy industry, and to attract the investment necessary for industrial modernization and environmental protection.

While emphasis is placed on the increased use of oil and natural gas, coal remains the dominant fuel, particularly for the electric power sector.

Poland's Energy Law went into effect in December 1997. Under the law, large electricity users can negotiate directly with generators of power. The Polish Power Grid Company, or Polskie Sieci Elektroenergetyczne (PSE), is obliged to provide transmission for the buyer and seller if it is technically feasible. The remainder of the electricity is sold under agreements that PSE signed with 35 power plants from 1994 to 1998. In December 1999, the Gielda Energii S.A. was established to set up an energy exchange in Poland. It is a consortium of several energy companies, including Endesa of Spain. The Polish energy exchange started operation on July 1, 2000. The schedule for phasing in third party access to electricity and natural gas started with the largest users and will eventually cover all customers by the end of 2005. The natural gas timetable follows a similar pattern.

Oil product pipelines and crude oil storage in Poland are run by the Oil Pipeline Exploitation Enterprise (PERN), a joint stock company wholly owned by the State Treasury. The Polish government has considered privatizing PERN, and if privatized, it would be expected to attract investors as it is one of the most profitable enterprises in Information on Poland, unless otherwise noted, is derived from a Country Overview provided by the US Department of Energy, under the supervision of Richard Lynch, and Poland. Oil shipments via railroad tank cars are handled by a separate company, DEC., which transports 14 million tons of products annually.

Polish Oil and Gas Company (POGC) is responsible for construction and operation of gas transmission and distribution system, and has a well-developed natural gas transmission system for supply of the increasing number of its customers in Poland. The number of residential and commercial gas customers is about 6.8 million, and the transmission and distribution network is 107,000 kilometers. By 2010, Poland expects to add 43,000 to 58,000 kilometers of new distribution pipelines. POGC constructs and operates underground gas storage facilities in Poland. There are seven underground gas storage sites available, and POGC also leases storage capacity in the Ukraine and Belarus.

POGC's privatization process will occur over the next few years, and include POGC's pipeline network as well as its upstream gas production and storage facilities. The first step was the division of POGC into six different entities: four regional gas distribution companies, a company to handle gas production and storage, and the "mother" company (POGC) which would import and market most of the gas consumed in Poland.

Despite concerns over energy dependency on the Russian Federation, larger imports of Russian natural gas will occur via the Yamal-Europe Transit Gas Pipeline which is being constructed across Poland and western Europe. The Yamal pipeline is expected to cost $35 billion, and will transport 13 billion cubic meters of natural gas annually into Poland.

It is expected that the entire project will be completed in 2010. POGC has also signed an agreement with the Danish Natural Gas Company to build a natural gas pipeline across the Baltic Sea which would carry 10 billion cubic metres annually.

In 1999, Poland began to privatize companies involved in the production and distribution of electricity. This privatization plan involves selling shares in electric generating and distribution companies to investors. The electricity industry has been reorganized into three layers of companies dedicated to the generation, transmission, and distribution subsectors. The generation subsector consists of large power stations and combined heat and power facilities. Generating capacity is expected to be adequate for the next several years, due to lower economic growth and transition to a less energy-intensive economy.

The Polish electric power sector needs to replace 16 gigawatts of obsolete installed capacity and to satisfy stricter environmental standards, and a substantial portion of the modernization cost will be covered by the privatization.

Once part of the POKOJ power distribution system, which was the former power distribution system of the Ukraine and Eastern European countries, CENTREL (the new power distribution system of Poland, the Czech Republic, Slovakia, and Hungary) is fully integrated into the Western European UCPTE system. Poland also maintains very strong links with distribution systems in the Ukraine and Belarus. These links provide Poland with an exchange potential with Western Europe and these former Soviet Union states.

As of the year 2000, the Polish power grid consists of about 200 kilometers of 750 kilovolt (kV) lines, about 4,700 kilometers of 400 kV lines, and about 7,900 kilometers of 220 kV lines, and is interconnected using more than 80 large substations.

The Polish Power Grid Company - Polskie Sieci Elektroenergetyczne (PSE) - was created in August 1990 by the Polish Ministry of Trade and Industry as a joint-stock company, wholly-owned by the Polish state treasury. PSE is the owner of Poland's high voltage electricity grid and is responsible for grid operations and power dispatching. The distribution subsector consists of 33 distribution companies, all of which are joint-stock companies, and utilizes 110 kV, 15 kV, and 0.4 kV lines to supply electricity to customers. Distribution companies represent approximately 40 per cent of all Polish electricity sector assets.

General rules for competitive markets for gas and electricity are contained in the Energy Law, with secondary rules for tariff, connections and non-conventional energy source being found in ordinances of the Ministry of the Economy. The Electricity Regulatory Agency is authorized under law to licence and set prices for monopoly activities.40 The privatization process in Poland falls under the Council of Ministers, with the Minister of the Treasury having the legal authority and obligation to prepare yearly programs of privatization of state-owned assets and to manage those programs approved by the Council. The Regulator has played a supportive but background role in the Polish privatization process. The Ministries of Treasury, Economy and Finance first adopted a plan for the electricity market in 1999. In December 2000, the framework of that market was introduced in the policy document, "Operational Rules for the Polish Electricity Market for the Year 2000 and Beyond."

The Polish Power Grid Company operates as a transmission system operator. Its primary activities are power dispatch, the operation of a national power system, power transmission through a high voltage system, generation of electricity, trading in electricity and energy system services both nationally and internationally, and developing a national electricity system through planning and research.41 The Energy Law guarantees third party access for energy producers within Poland, but does not provide this guarantee for external parties, though this is likely to change as a result of EU requirements. New transmission tariffs are being prepared for the Polish Power Grid Companies and distribution companies.

A Power Exchange has been designed but only small amounts of electricity are sold

there, in the range of 3 per cent. The Power Exchange was established without specific legislation, and is a joint company with shares held by the State Treasury. Prices on the exchange are exempt from approval by the Energy Regulatory Agency. The exchange operates a day ahead market, where distribution companies and large customers bid the price at which they will buy, and generators and wholesalers bid a price at which they will sell supply. A clearing house price is then established for each hour of the subsequent day. Bilateral short and long term contracts are also permitted, and are the majority of the market.

The Energy Regulatory Agency may have some problems in promoting market development because of pre-existing long-term energy contracts for the delivery of electricity. Although

these contracts have facilitated financing equipment, they have complicated the development of competitive markets, and there is a concern that long-term contracts might interfere with the establishment of a Power Exchange. Specifically, most energy is sold pursuant to the long-term contract and very little energy is available to trade on the Power Exchange. Further, such long-term contracts might be used to effectively exclude other future potential entrants into the market.

The restructuring of Poland's downstream oil industry began in 1994 with the establishment of Nafta Polska, the joint stock holding company for Poland's oil industry, which is ultimately responsible for the privatization of Poland's oil and gas sectors. Nafta Polska is comprised of Poland's two major refineries, five smaller refineries, and the Central Distribution Company (CPN). At the end of 1996, CPN was to be divided into three companies: CPN (the gas station company), DEC Ltd. (the railway tank company), and Naftobazy Ltd. (the oil storage company). Poland's downstream petroleum sector consists today mainly of PKN Orlen, which is the Plock refinery and the former CPN Gas station network, and the Gdansk refinery. Gdansk is to be sold by Nafta Polska and PKN Orlen might be the buyer.

Environmental impacts from energy production are a major concern. Energy-related environmental problems include air pollution from burning coal in power and district heating plants, water pollution from coal mine dumping of saline water into the Vistula and Ober rivers and refinery effluents of insufficiently treated water, and solid waste from coal mines and power plants. Poland's three largest coal mines are among the largest sources of pollution.

Large power plants and combined heat and power facilities have been equipped with high stacks and electrostatic precipitators, or at least bag filters, allowing for the capture of increasing amounts of fly ash particulates. Flue gas desulfurization and low-NOx technology were only introduced in the 1990s. Because of this, and the use of lower sulfur coal, the environmental performance of many power plants has improved considerably. However, under environmental regulations adopted in 1990, new emission standards for existing plants came into effect in 1998 that are in line with EU standards.

Additionally, all plants will need low-NOx burners and improved fly ash particulates removal.

The Energy Regulatory Authority has indicated its intention to put more emphasis on the spot market for short term contracts for electricity and less emphasis on long term

contracts. At the present time, it is not clear how this policy change will be implemented. If the balance shifts to short term contracts, this might tend to favor new generation sources, municipal combined heat and power, and "green" power sources that have a legally privileged status. Poland has signed a number of international agreements and accords on the environment, including adopting all obligations from the Convention on Climate Change, as well as other agreements to control transboundary emissions.

Czech Republic energy markets and liberalization

The Czech Republic has an energy strategy that includes market energy prices; state-owned energy enterprises being restructured and privatized; the production of safer, more efficient, and less polluting forms of energy; the encouragement of energy conservation; increased and diversified connections to international oil and gas pipelines and electricity networks; and more efficient domestic oil and gas production. The Czech government is focusing on harmonizing Czech energy sector standards with those in the EU. This means decreasing Czech dependence on solid fuels as a primary energy source. Coal will gradually be replaced as a source of heat, or will be increasingly used for co-generation.

Improvements are also planned for legislation, business conditions, statistics and reporting standards in the energy sector to conform Czech standards with those of the EU.

On 1 January 2001 a new energy regulatory authority began operating in the Czech Republic. Its responsibilities include determining rates that customers will pay for energy and setting up the framework for third party access to the electrical grid. The schedule for phasing in third party access to electricity starts with the largest users and will eventually cover all customers by the end of 2006. The natural gas timetable will follow a similar pattern with the largest customers getting access first. Transgas, the Czech gas pipeline utility, phased out its subsidies to customers in 2003.

Energy audits by government-approved auditors are now mandatory for all government facilities with energy uses of more than 1,500 gigajoules per year. Energy audits are also required for non-government energy users, but the threshold is much higher as any energy user who consumes at least 35,000 gigajoules per year must have an energy audit.

The purpose of these audits is to encourage energy conservation and also outside investment by energy services companies for making any economically-feasible improvements in energy usage. Oil policies are part of the Czech Republic's bid to be admitted to the EU, particularly building a 90-day state oil reserve. In 2001, the EU agreed to the Czech Republic's request to extend the deadline for building this reserve to December 2005.

Ukraine's energy sectors

Taking the cornerstones of the EU energy policy towards welfare through competition as a benchmark, this section assess the extent to which Ukraine's gas and electricity sector comply with EU standards.

Since the early 1990s, an energy policy intending to create a competition-driven energy market has been implemented by the European Union (EU). Accordingly, Ukraine's recently stated intention to harmonize its energy policy with EU standards appears to be a useful starting point for redefining its energy policy. Against this background, the present paper describes the main elements of the EU energy policy in its design an progress, assesses the extend to which the Ukrainian energy sector complies or not complies with the main principles of the EU energy policy and gives recommendations as to how Ukrainian policy-makers should further proceed with the intended harmonization.

Gas sector

Although the different functions such as gas extraction, transmission system operation, wholesale trade and retailing are performed by separate legal entities, Ukraine's gas sector still has a monopoly structure because with the exception of retailing, each task is almost exclusively performed by a single firm all of which are owned and controlled by a central, state-owned holding, NAK "Naftogaz Ukraine"[4]. In particular, Naftogaz has full control over transmission systems and gas storage facilities through its subsidiary Ukrtransgaz, and it also owns large parts of the distribution networks, which are given to gas retailers (Oblgazes) for operation under management contracts. The national energy regulator NERC sets consumer tariffs based on governmental instructions.

Taking the requirements of the EU energy directives as a benchmark, Ukraine's gas sector performs as follows:

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[4] In fact, the market shares of the few independent firms which operate in either gas extraction or wholesale trader are negligible.

- Unbundling. Despite the role of Naftogaz as central holding, the operation of transmission systems is legally unbundled from gas extraction, wholesale trade or retailing. In contrast, distribution systems are operated by Oblgazes, which also perform as retailers. Relatively, full compliance with the EU directives requires the unbundling of distribution systems from Oblgazes[5].

- TPA. Access of third parties to networks is not effectively guaranteed. Although regulatory body (NERC) sets tariffs for network access, there are no procedures or legally binding norms in place, according to which third parties can enforce access to transmission or distribution systems owned by Naftogaz. In fact, NERC operates so far only on the basis of a presidential decree. As a result, its role in the gas sector is highly politically dependent and has so far been limited to the execution of politically determined decisions.

- Market opening. Licenses for all types of operation in the gas sector are issued by NERC. While a specific law defines licensing criteria[6], NERC has only limited possibilities to act independently[7]. Similar problems as for licensing apply to other necessary conditions for market opening such as well-defined contract termination procedures that would allow customers to switch suppliers. Hence, Ukraine's gas sector so far only poorly complies with the market opening criteria of the EU energy directives.

As preliminary conclusion, two urgent improvements are necessary for a better compliance with the EU energy directives:

a. Guarantee regulated TPA to network systems and storage facilities by:

• Expanding NERCS competences in the setting of system tariffs (including the use of incentive-stimulating methodologies);

• Defining appropriate legal procedures or legally binding norms to enforce TPA; and

• Strengthening the role of NERC in enforcing them.

b. Improve market opening by:

• Specifying objective and transparent licensing criteria for new entries into the gas market;

• Determining contract termination procedures; and

• Strengthening the role of NERC in enforcing them.

Nevertheless, all these measures are unlikely to stimulate competition in the gas sector unless prices are raised to internationally comparable levels. In fact, the monopolistic structure of the gas market reflects the intention of the state to limit and control various types of arbitrage opportunities that arise from import prices for gas at rather low levels. With the current increase of import prices, such arbitrage opportunities strongly diminish. Accordingly, a sensitive energy policy should now seek to ensure that price increases are not higher than necessary by stimulating the full use of efficiency potentials by stimulating competition on the domestic gas market. In addition to the steps listed above, this also requires the abolition of socially motivated tariff setting for households and a gradual replacement of consumer price regulation by competition on wholesale as well as on retail markets. Eventually, this will also require that access tariffs and TPA to distribution networks are ensured and sufficiently regulated and that the operation of distribution systems are unbundled from retail activities of Oblgazes[8]. In the long run a strategy to foster competition must also include privatization.

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[4] This situation resembles the average performance of the EU-15 Member States, of which only half have so far achieved full unbundling of transmission and distribution systems.

[6] Law of Ukraine on licensing of certain entrepreneurial activities.

[7] In fact, the recent market entry of a second wholesale trading company (UkrGazEnergo) as part of the January 6 gas agreement with Gazprom licensing has been strongly based on government interventions.

[8] For a sequencing of reform steps necessary to foster competition on Ukraine's gas markets see our Advisory Paper U3: Ukraine's gas sector: Time for reforms. May 2005.

Finally, it must be stressed that fostering competition on wholesale and retail markets in Ukraine does not worsen the bargaining position vis-a-vis the Russian supplier because the gas transit system as well as storage capacities still remain under the control of a regulating agency, which could e.g. be used in setting up a framework agreement for gas imports.

Electricity sector

The Ukrainian electricity sector is structurally more open to competition than the gas sector. The market functions along the British pool model, where electricity generators submit bids into a common pool from which retail companies and eligible, large-scale power consumers purchase their electricity. The operator of this wholesale pool, the state-owned company Energorynok, balances supply and demand and determines wholesale prices. Price setting of generators is regulated for several generators[9] while in particular operators of thermal power plants can submit independent bids, which allows for some degree of competition. Most electricity consumers including households are supplied by regionally separated distribution companies (Oblenergos) at regulated tariffs, but industrial consumers are free to choose alternative suppliers without tariffs being regulated[10].

Against the benchmark of the EU energy directives, the electricity sector performs as follows:

• Unbundling: Transmission systems are operated by Ukrenergo, a legally independent, state-owned company. Distribution systems belong to and are operated by Oblenergos, the electricity retailers. Hence, as for gas, unbundling requirements are only partially satisfied[11].

• TPA: Third party access to the networks is guaranteed by the Law on Electricity Sector and its implementation is observed by NERC. Tariffs for the network access are regularly published. While Oblenergos as retailers and operators of distribution systems can try to block new entrants, there are mechanisms in place to solve such disputes.

• Market opening: Licenses in the electricity sector are issued by NERC based on an explicit legal basis[12]. Together with the provisions on third-party access, the market appears to be sufficiently open to new entrants. Some degree of competition is present in the market. Nevertheless, regulated household tariffs, which are set at below-cost levels, preclude new entries into the retail market. Also, switching procedures are not clearly defined for all relevant customer groups including small-scale businesses. Power generation is competitive within the thermal power plant segment, in which plants compete in the wholesale market through bidding.

• Tariff regulation: In contrast to the gas sector, NERC plays a prominent role in electricity by regulating tariffs of distribution and transmission networks, bid prices for CHPs, wind- and hydropower as well as nuclear power plants and prices of most retailers. For the later, NERC sets household tariffs on levels below their costs and cross-subsidizes sales to households by setting industry tariffs accordingly. For all price regulation, the regulator uses standard cost-plus approaches, which do not comply with the standards set by the EU directives because they fail to provide incentives to regulated firms to reduce their costs and increase efficiency levels.

• Interconnection: The state-owned company Ukrinterenergo effectively controls as monopoly exporter of electricity the degree of interconnection of Ukraine's power grid with its neighboring countries. This constellation is necessary due to the low levels of electricity prices

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[9] This includes hydropower as well as nuclear power plants, CHPs and wind power.

[10] The market share of independent suppliers has more than doubled over recent years, from about 6% in 2002 to 14% by the end of 2004.

[11] Again, we stress that this assessment is fairly in line with average performance of EU-15 member states.

[12] Law of Ukraine on licensing of certain entrepreneurial activities.

in Ukraine, which in turn are caused by the regulation of end-user prices as described above. However, denying power generators the possibility to enter into direct contracts with foreign parties creates a main barrier to investment and new entries and hence, competition in the sector.

Hence, Ukraine's electricity sector more clearly complies with the EU directives. However, although the regulator effectively plays a much stronger role than in the gas sector, it still lacks a sufficient legal basis, implying that the overall regulatory environment is still subject to considerable uncertainty. Accordingly, with the exception of thermal power generators who submit competitive bids to Energorynok, competition in the electricity sector has remained fairly low. In fact, Oblenergos have maintained their predominant position as regional monopolies on the retail market, mainly because of a rigid regulation of final consumer prices aiming at the cross-subsidizing household tariffs, which in turn reduces overall profitability in the retail segment. This regulatory strategy was possible with gas prices at the levels that prevailed until 2005 (about USD 50 per tcm). However, the dramatic recent increase will also raise the costs of electricity generation significantly[13] and will therefore also force increases in electricity prices. In this new situation, it will be important that all possible efficiency gains are realized so that price increases are no higher than absolutely necessary. At the same time, continuing the cross-subsidization of lower household tariffs by higher industry tariffs will cause even stronger distortions and increasingly hurt industrial production.

Against this background, policy makers should:

a. Cancel the cross-subsidization of household tariffs and redefine NERC's methodology to use incentive-stimulating approaches leading regulated firms to increase their efficiency.

b. Stimulate competition in the retail segment by regulating access tariffs and TPA to distribution networks thorough NERC and eventually, unbundling distribution systems from retail activities of Oblenergos.

c. Stimulate the integration of Ukraine's electricity system with its neighboring countries by allowing electricity generators to directly conclude export contracts with foreign custormers. Besides these measures the state could consider further privatization in the energy sector, which was recently stopped.

Conclusion

As we point out in the assessment of Ukraine's electricity and gas sector, compliance with EU standards can be achieved if more emphasis is placed on ensuring third party access to transmission and distribution networks, as well as on market opening. In addition, we argue that it will also be possible to bring energy prices up to internationally comparable levels so that companies will have sufficient incentives to operate in Ukraine's energy markets. Finally, the position of the regulatory agency, NERC, must be strengthened by creating an appropriate legal basis for its operations.

[13] Gas units account for about a third of Ukraine's electricity generation, and the costs of gas-based power generation determine marginal costs in the merit order at least during peak hours. Assuming an energy efficiency of 30% for a 20 years old OCGT generation unit and variable O&M costs of about USD 5 per MWh, a 60% increase of gas prices will raise the variable costs of gas-based electricity generation by about 40%.