The CIS Common Electric Power Market

1. INTRODUCTION

An effective electric-power industry represents a crucial infrastructural foundation for economic growth. In turn, developed mechanisms for transborder trade and investments can considerably increase the total effectiveness and reliability of the electric-power industry. Work on the introduction of such mechanisms is carried out within the framework of creating the Common Power Market of the CIS. The following chapter covers the CPM’s prospects and potential obstacles to overcome.

The 1990s passed without much trace of activity and consequently mutual trade and investment levels in the CIS are very low today. Energy transmission between CIS countries has decreased by three to four times compared with the 1980s. Nowadays, statistics demonstrate the stagnation of energy flows between CIS countries. Imports and exports between them account for 5-6% of internal energy consumption. Overall, the CIS is a net exporter of electric power, however the absolute figures for both imports and exports are not significant. They do not reflect existing potential: with substantial deposits of coal and gas, huge hydro-energy potential and competitive advantages in power engineering, CIS countries should be realistically able to increase supplies.

The situation in the post-Soviet area is unique. Unlike the EU, North America, South America, South-East Asia and other macro-regions who wish to create a CPM, the USSR already had a single system, which was founded on a central administration. The CIS countries inherited a single set of technical standards from the USSR, as well as developed transborder capacity for transmission of electric power. Currently, the subject under consideration is creating an effective common electricity market based on market principles.

In its formation, the CPM may pass through four stages: (1) from individual national energy markets, (2) to a market, where transborder trade plays an important part, (3) to a regional market with common rules and finally (4) to a regional secondary or futures market.

Today, due to the serious measures taken to provide uninterrupted work in the parallel mode and increasing mutual energy flows, CIS countries are nearing the second stage, with the main drivers of the integration being Russia and Kazakhstan. However, the CPM can only be considered complete after the third stage – a regional spot market with common rules. On the way to creating such a market, CIS countries will
have to overcome a number of obstacles. In our opinion, the most obtru-
sive barrier is the incomplete liberalisation of the large Russian market
system. The complete liberalisation of the Russian energy market, which
is expected in 2011, will enable considerable progress to be made in form-
ing a CPM for the CIS. Of course, a number of other issues should also
be solved. E.g. the effective functioning of the Central Asian water and
energy system represents a complex problem. Other issues are related to
transit tariffs, customs controls and technical standards. Without solving
these issues, the full participation of the region’s nations in a CPM is
impossible.

Finally, an interesting issue is extending the CPM beyond the post-
Soviet area. We believe that the economic logic of the CPM urges its
creation and expansion.

This chapter begins by considering the condition and dynamics of mu-
tual trade and investments in the electric power industry of CIS countries
and EurAsEC, which forms the basis for consideration and estimation of
integration initiatives within the framework of the CIS and EurAsEC. Follow-
ing this is an analysis of systematic, economic, legal and technical
barriers, which set obstacles to the development of a common electric
power market. In the following section we prove the expediency of going
beyond the boundaries of the post-Soviet area and the creation of the
Eurasian common electric power market. The conclusions of this review
are summarised at the end.

2. MUTUAL TRADE AND INVESTMENT IN THE ELECTRIC POWER SECTOR
OF THE CIS

The intensiveness of the formation of common electric power markets
can be characterised by the dynamics of trade in electric power and level
of mutual investment in the sector. Using these indicators, one could
track the level of regional integration in this sector. Within this, mutual
investments are the most significant and sustainable indicators because
of their long-term conditions, and also because trans-border investments
in generation and distribution often create sustainable trade flows be-
tween countries. One example is the Ekibastuz thermal power plant-2
(TPP-2), 50 percent of which belongs to INTER RAO. A significant part
of the energy generated in this plant was exported to Russia.

However, volumes of trade in electric power can adequately character-
ise overall levels of integration. In fact, the volume of electric power ex-
change between CIS countries has fallen 3 to 4 times compared to 1980s
levels. At the present time, the volume of export and import between
countries is 5 to 6 percent of domestic consumption of electric power.

Tables 1 to 3 cover the four years from 2004 to 2007 and demonstrate
a decrease in the overall volumes of imports and exports of the CIS
and EurAsEC. There are two basic explanations for this. Firstly, for the
past few years, the rapid growth of the economies of the member states
of these organisations resulted in increased current internal consumption,
that, in turn, resulted in decreased exports. At the same time, the long investment cycle and underinvestment in the electric power industry did not allow for an increase in generated and exported electric power. Secondly, an increase in exports is impeded by the existence of weak mechanisms for foreign trade. Additionally, in the Central Asian region any essential expansion of trade in electric power is impeded by the sub-standard regulation of the water and energy complex.

With regard to imports, we can note a decrease in total imports of electric power and stagnation in imports from the CIS and EurAsEC states. One of the important peculiarities of the trade structure of electric power within the EurAsEC countries is that practically all of the imports (92%) come from CIS countries, whereas only half (54%) of exports is directed toward CIS countries. The other half goes to such countries as China, the EU (importers are Finland and the Baltic states), Iran etc.

<table>
<thead>
<tr>
<th>Exporting Countries</th>
<th>Total</th>
<th>To countries</th>
<th>Importing countries</th>
</tr>
</thead>
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<tr>
<td></td>
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<td>CIS</td>
<td>EurAsEC</td>
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<tr>
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</table>

**Table 6.1**

Export of electric power to CIS countries and EurAsEC in 2004–2007 (according to data from exporting countries; million kWh)

Source: Statistic Committee of the CIS
### Table 6.2
Imports of electric power from CIS countries and EurAsEC in 2004–2006.
( according to data from importing countries in million kWh)

<table>
<thead>
<tr>
<th>Importing Countries</th>
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<th>CIS</th>
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**Source:** Statistics Committee of the CIS

### Table 6.3
Import and export of electric power by the CIS, million kWh

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<th>2004</th>
<th>2005</th>
<th>2006</th>
<th>2007</th>
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<td>Export, CIS</td>
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<td>Import, total</td>
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<td>Import, CIS</td>
<td>18976</td>
<td>20765</td>
<td>18343</td>
<td>16582</td>
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</tbody>
</table>

**Source:** Statistics committee of the CIS

The CIS is a net exporter of electric power. However, the volumes are insignificant. The “Chinese” project alone, commenced by INTER RAO, will increase the volumes of CIS electric power exports by 200%. Given that they have the largest reserves of coal and gas, a huge energy poten-
tial, and the competitive advantage in power mechanical engineering, the CIS countries are capable of increasing supplies.

The “champions” of the integration processes within the CIS are Kazakhstan and Russia. The parallel work achieved since 2001 allowed expansion of mutual trade in electric power. During 2001 to 2005 electric power exports from Kazakhstan to Russia reached 17.1 billion kWh. Aside from this, the countries managed to organise the transit of power from Kyrgyzstan to Russia (3.6 billion kWh over 2003-2005).

Russia is the most substantial player. Russian export peaked in 2005 but had decreased by 10% by 2007 due to increased domestic consumption.

The main importers of Russian energy in 2007 were Finland (more than 54%), Belarus (about 14%), Kazakhstan, Latvia and Lithuania (over 11%, 7% and 5%, respectively). The leading role of Finland in 2006-07 can be explained by favourable pricing in the NordPool market. Energy exports to Norway and northern regions of Finland were made from the hydro power plants “Borisoglebskaya”, “Rayakoski” and “Kaytakoski” under the terms of border trade.

![Figure 6.1](http://www.interrao.ru/busines/export/, available as of June 2008)

**Figure 6.1**
Russian electric power exports in 2002–2007 (billion kWh)

**Figure 6.2**
Russian energy exports in 2007
In 2007 the total import of energy by the INTER RAO UES was 5.6 bln kWh which is 0.5 bln kWh (about 10%) more than in 2006. In general, last two years witnessed a considerable decrease in imports compared to 2004-2005. The reasons are quite evident: growing economies of Ukraine and Kazakhstan require more of its own energy supplies. Besides, Lithuania is preparing to dismantle Ignalina Nuclear power station.

In 2007, the share of imports from Kazakhstan in the total structure of electric power imports was 58 %, imports from Ukraine and Lithuania accounted for 17% and 7% of imported power, respectively, while imports from Azerbaijan and Georgia were approximately 5.5%.

In 2007 Russia imported 3263.3 mln kWh of electric power from the Kazakhstani supply network, which is 413,57 million kWh less than in 2006, due to increased consumption in Kazakhstan.

The structural imbalance between the production and consumption of electricity in Kazakhstan has pushed the country to intensify international trade. Of course, the planned construction of the Balkhash HPP with 4
units producing 660 MW each and the construction of a North-South transmission line partially solves the problems. However, the need for international cooperation is rational and pertinent. We would mention, firstly, the optimisation of energy flows with Russia (import from Russia to the West region of Kazakhstan and export from the North region to Russia), secondly, the participation in the development of the water and energy complex of the Central Asian Region (CAR) with the view of covering the deficit of the South region with the hydro-energy produced by Tajikistan and Kyrgyzstan, and, thirdly, the increase of the transit potential from these countries to Russia via the territories of Kazakhstan and Uzbekistan. The economic viability of these solutions makes them promising in the long term.

Let’s consider mutual investment. After the ruinous 1990s, mutual investments in the electric power of the CIS became a reality in the 2000s. However, there are only Russian investments in the CIS countries. During recent years, RAO UES has acquired assets in Armenia, Georgia, Kazakhstan and Moldova. One of the biggest projects is the construction of the 670 MW Sangtudin Hydro power plant (HPP-1) in Tajikistan. The first unit was successfully launched in January 2008, the second in July 2008.

Additionally, after reforms in the RAO UES, INTER RAO will operate foreign assets. Table 7 illustrates the foreign assets of the company in Azerbaijan, Armenia, Georgia, Kazakhstan, Moldova and Ukraine.
An interesting project is the participation of INTER RAO in the construction of the cascade of Kambarata HPPs in Kyrgyzstan. On 29 December 2007 the results were announced for the bidding for the preparation of a feasibility study for the construction of the Kambarata HPP-1 and HPP-2. The winning bid was a joint proposal made by Electricité de France and PricewaterhouseCoopers. Russian and Kazakh power companies will finance the $3 million feasibility study. The bidding was conducted in accordance with decisions adopted at inter-governmental level between Russia, Kazakhstan and Kyrgyzstan. For organisational purposes a simple partnership between JSC Inter RAO UES, JSC Electric Power Plants (Kyrgyzstan) and the JSC KazKuat (Kazakhstan) was formed.

Among the large-scale initiatives of other players, we should note Rusal’s attempt to construct the Rogun HPP in Tadjikistan. Within the project, the Russian aluminum company planned to invest as much as $1.5-2 billion, but Rusal was unable to agree with the Tajik government on the technical and economic parameters and, consequently, had to abandon the project. Nevertheless, Russia is still very interested in financing and constructing the Rogun HPP. This was confirmed during the latest meetings between Russian and Tajik government officials.

### Table 6.5

<table>
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<tr>
<th>Acquirer</th>
<th>Acquired entity</th>
<th>Share, %</th>
<th>Amount, $ mln</th>
<th>Year</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inter RAO UES</td>
<td>Distribution company Telasi (75%), AES Mtcari (100%), AES Transenergy (50%)</td>
<td></td>
<td>57</td>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>JSC Ekibastuz Centre (RK) and Inter RAO EES</td>
<td>JSC Ekibastuz TPP-2, Kazakhstan (50/50)</td>
<td></td>
<td>90</td>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>Inter RAO UES</td>
<td>Sevano-Razdan cascade of 7 HPPs, “Armenian electric networks” (Armenia)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>JSC International Energy corporation, EMFESZ (Hungary)</td>
<td>Moldova thermal power station (Moldova, Transnistria)</td>
<td></td>
<td>39.2</td>
<td>2003</td>
<td></td>
</tr>
<tr>
<td>JSC RAO UES</td>
<td>JSC Sangtudin HPP-1, Tajikistan (50/50)</td>
<td></td>
<td>500</td>
<td>2005</td>
<td></td>
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<tr>
<td>JSC Tekhsnabeksport, JSC Atomstroyexport, JSC NAK Kazatomprom</td>
<td>JSC Centre of Uranium enrichment (50/50)</td>
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<td></td>
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<tr>
<td>JSC Tekhsnabeksport, JSC Atomstroyexport, JSC NAK Kazatomprom</td>
<td>JV Nuclear Power Plants (50/50)</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

*Trans-border investment in the electric power industry in the CIS*

*Sources: Kuznetsov (2007); Khelfets, Libman (2008); author’s database*
Table 5 provides information on trans-border investments in the electric power industry of the CIS. Despite considerable revival during recent years, mutual investments are at a low level and are characterised by unilateral structures. Practically all of the investments are made by the Russian INTER RAO. To sum up, insignificant volumes of mutual trade in the electric power sector and a low level of mutual investment do not reflect the huge potential of the sector and represent an obstacle to the creation of a common electric power market.

Table 6.

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<th>Assets</th>
<th>Country</th>
<th>Type</th>
<th>Capacity, length</th>
<th>Comments</th>
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</thead>
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<td>Sevano-Razdan cascade of HPPs (in operation)</td>
<td>Armenia</td>
<td>Generation</td>
<td>560 MW</td>
<td>Includes 7 HPPs</td>
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<td>Razdan thermal power station (in operation)</td>
<td>Armenia</td>
<td>Generation</td>
<td>1110 MW</td>
<td>Russian state property</td>
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<tr>
<td>JSC Electric Networks of Armenia</td>
<td>Armenia</td>
<td>Distribution</td>
<td>29600 km</td>
<td>Acquired by Midland Group for $73 mln</td>
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<tr>
<td>JSC Armenian nuclear power plant (in operation)</td>
<td>Armenia</td>
<td>Generation</td>
<td>815 MW</td>
<td>Managed by INTER RAO</td>
</tr>
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<td>Mtkvari Energetika (9th and 10th blocks of the Tbilisi HPP)</td>
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<td>Generation</td>
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<td>2 units of 300 MW</td>
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</tr>
<tr>
<td>Khrami HPP-1 and Khrami HPP-2 (in operation)</td>
<td>Georgia</td>
<td>Generation</td>
<td>220 MW</td>
<td>Of 110 MW</td>
</tr>
<tr>
<td>Sandgudin HPP-1</td>
<td>Tajikistan</td>
<td>Generation</td>
<td>670 MW</td>
<td>1st power unit launched in 2008</td>
</tr>
<tr>
<td>INTER RAO Ukraine</td>
<td>Ukraine</td>
<td>Equipment supply</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Moldovan TPP</td>
<td>Moldova</td>
<td>Generation</td>
<td>2520 MW</td>
<td>49% sold to unknown buyer (supposedly Gazprom) in 2007</td>
</tr>
<tr>
<td>Ekihastuz TPP-2 (50%)</td>
<td>Kazakhstan</td>
<td>Generation</td>
<td>1000 MW</td>
<td>2 units of 500 MW; it is planned to construct a 3rd energy unit of 500 MW</td>
</tr>
<tr>
<td>RAO Nordic Oy</td>
<td>Finland</td>
<td>Trade</td>
<td>-</td>
<td>Trader in NordPool</td>
</tr>
<tr>
<td>TGR Enerji</td>
<td>Turkey</td>
<td>Trade</td>
<td>-</td>
<td>Trader</td>
</tr>
</tbody>
</table>

Georgian assets of INTER RAO may suffer (nationalisation is one option) as a consequence of the Russian-Georgian war (August 2008).
3. Integration Initiatives in the CIS and EurAsEC

The re-integration of the CIS electric power industries was begun on the 14 February 1992 when the Council of the Heads of States signed the Agreements on Coordination of Interstate Relations in the Electric Power Industry of the CIS. The first legal document, which created the legal basis for the functioning in parallel mode, was the Agreement of Parallel Work of Electric Power Systems of the CIS member countries, signed at the meeting of the Council of the Heads of Governments of the CIS on 25 November 1998. At present, eleven CIS member countries work in parallel mode.

Within the CIS, active work has been done by the Electric Power Council (EPC, Electroenergeticheskiy Sovet) of the CIS, chaired from 2000 to May 2008 by Anatoliy Chubays. The EPC is considered the most effective of all the industry councils of the CIS.

The leading role of the CIS in the formation of the CPM can be explained by a number of factors. The predominant reason was a real need for coordination in the 1990s. It was necessary to maintain cooperation and parallel work on the energy complexes of the newly independent states that had previously formed a single energy system. At that moment, the EPC was the only platform for the coordination of several urgent technical issues. The work of the electric power council was gradually becoming more effective, and was in high demand by the energy companies of post-Soviet countries. Personnel factors also played a significant role – Anatoliy Chubays is one of the most effective managers in the post-Soviet area.

In the 2000s, the following important documents were adopted by the CIS:

- Strategy (main directions) of Interaction and Cooperation of the Member States of the CIS in the sphere of electric power until 2020, approved by a decision of the EPC on 26 May 2005;
- The Concept of the Formation of the Common Power Market among the Member States of the CIS, adopted at the Council of the Heads of the CIS Governments on 25 November 2005; and
- The Agreement on Formation of the Common Power Market between the Member States of the CIS of 25.05.2007.

The Concept of the Formation of the Common Power Market represents a coordinated approach to the formation of the common power market of the CIS. The concept takes into account the main principles of integration and liberalisation of the European energy markets. In accordance with the Concept, the following types of relations between its subjects determine the functional structure of the CPM of the CIS:

- First, wholesale trade of electric power with independent determination of prices based on bilateral agreements (between buyers and sellers of electric power);
- Second, a centralised market of electric power;
- Third, a balancing market;
Fourth, a market for systemic and auxiliary services, including the mechanism of utilisation of the capacity reserves.

Each of the above-mentioned segments of the market are to be introduced as soon as countries are ready, taking into account the state of technical equipment and national legislations.

In order to provide the freedom to choose a power supplier to consumers, the CIS member states have agreed on conditions for the formation of markets on the basis of bilateral contracts, spot markets and a common CIS electric power trade platform, the status and powers of which are defined by the Concept. The CIS member states provide gradual liberalisation of internal electricity markets, decrease barriers for consumers’ access to the CPM and integrate energy markets in accordance with the schedules of the main activities of joining the CPM. The Concept includes the protection of investments and the possibility of investment activity in the electric power industry of member states, as well as the possibility of sale of the generation, network and other types of assets on the basis of contracts between owners. The Electric Power Council of the CIS executes the general coordination of the formation of the CPM. Members of the CPM and the Electric Power Council determine the special body on the coordination of the functioning of the CPM. At the end of May 2007, the Agreement of the Formation of the Common Electric Power Market was signed at the meeting of the Council of the Heads of CIS Governments in Yalta. Only 6 parties signed the document: Russia, Armenia, Belarus, Kazakhstan, Tajikistan and Kyrgyzstan. This result once again confirms that some CIS countries have different attitudes with respect to integration processes in general and energy in particular. Consequently, V. Luchnikov, Ukrainian Vice-minister for fuel and Energy, declared that as long as the unified basic conditions are not created for all countries to work in a common electric power market, Ukraine will not join it and will not sign an agreement concerning the creation of the market.²

The states will have to make a list of trans-border transmission lines. The capacities of these lines are going to be auctioned, and the winners will be those suppliers and buyers that propose the best price per 1 MW. These auctions will be held over varying periods, ranging from a few months to several years. The first interstate sales of electricity using market prices should be held at the Russian-Kazakh border.

The Eurasian Economic Community started its own work on developing integration within the power sector later than the CIS. According to S.D. Primbetov, Vice-Secretary General of the EurAsEC in 2002-2007, the CIS and the EurAsEC do not fulfil the same role.³ The EurAsEC does not claim to possess the leading role in the complicated organisational and technical issues of power network integration that are solved by the Electric Power Council of the CIS, but rather it facilitates the practical

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² Smirnov (2007).
implementation of the decisions adopted there and ensures coordination between various energy markets.

The documents developed by the EurAsEC:

- The Concept of Effective Utilisation of Water and Energy Resources of the Central Asian Region (CAR).\(^4\) Optimal modes for the utilisation of the hydro energy potential of the region are pertinent not only for the CAR, but also for Russia and other states, such as China, India, Afghanistan, and Iran.\(^5\) The Concept of the Formation of the Common Power Market of the EurAsEC member states is being developed taking into account the issues related to the formation of a single fuel and energy complex of the EurAsEC member states as well as international experience.\(^6\)

The EurAsEC is also working on the Concept of the Energy Market, which theoretically comprises various energy sources. Therefore, the members of the working group of the EurAsEC are primarily oil and gas experts as well as employees of the economic ministries of the member states. The Principles of the Concept of the Common energy market of the EurAsEC are the following:

- Development of a balanced, mutually advantageous, regulated power market and coordinated power policy.
- Equality, mutual benefits and common interests. It sets as a goal the development of an optimum pricing scheme in the CPM based on a transparent market mechanism of pricing and supposing the creation of the most favourable treatment in the delivery and transit and unification of the national legislations.
- Single norms and rules of functioning of the technological infrastructure.
- Balance of production, supplies and consumption of power resources.
- Gradual liberalisation of the power sector, introduction of market principles and creation of a competitive environment.

The implementation of the Concept of the Common Energy market of the EurAsEC member states is based on the following priority programs of the development of the power sector:

- Construction of new hydro power plants in Tajikistan and Kyrgyzstan. This should be executed in compliance with rational river mode regulation.
- Intensive development of the system of power transmission lines between the EurAsEC member states.
- Interconnection of the energy systems of the CIS and Baltic countries with the energy systems of Central and Western Europe, repre-

\(^4\) Development of the Concept is made in accordance with the decision of the EurAsEC Interstate Council (No 314 and No 315 of 16 August 2006).
\(^5\) Vinokurov (2007).
\(^6\) The Concept is developed in accordance with the Foundations of the Energy Policy of the EurAsEC Member States, approved by the decision of the Interstate Council, February 28, 2003, No 103, and in compliance with the decisions of the EurAsEC Interstate Council, January 25, 2006, No 269 and August 16, 2006, No 314.
presented by the Union for the Co-ordination of Transmission of Electricity (UCTE).

- Creation of common programs for the realisation of energy saving potential.
- Development of joint ventures to provide nuclear fuel to nuclear plants in EurAsEC countries (with participation of Russia, Kazakhstan, Uzbekistan and Belarus).

The all-embracing approach of the EurAsEC is somewhat artificial. (We must remember, however, that the idea of the formation of a complex EurAsEC energy market originated from the Byelorussians, who have specific interests, particularly with regard to access to oil and gas infrastructure). There is no doubt that, at the level of the concept, the energy markets should be considered as intertwined, which will allow the implementation of the principle of comparative advantages for the states involved in the process of integration. At the same time, the energy sectors can form separate markets with their own specific regulations. The implementation of the idea of a common energy market, which defines the systematic work of the EurAsEC, inadequately deals with specifics of energy sectors. *In our opinion, it is necessary to work on the creation of a number of common markets, namely: a common electric power market; a common oil and gas market and a common coal market. After this a common uranium market could follow. In spite of the visible interrelation, the specifics of these markets demand independent regulation.*

The common market for oil and gas is formed on the basis of intergovernmental agreements; its future is connected to the solution of the transit tariff problem and the development of oil and gas transport infrastructure. A common coal market already exists; in order to increase its efficiency, it is necessary to prioritise the optimisation of railroad tariffs. Also we should emphasise that the development of a common electric power market with the elimination of structural skews in the thermal power sector should result in further optimisation of the common coal market.

In the future, CIS countries may start forming a common uranium market. This is unthinkable without the partnership of Russia and Kazakhstan. Other countries could be interested in a common market, including Belarus, Kyrgyzstan, Armenia, Ukraine, Uzbekistan and Tajikistan.

International experience of energy market integration demonstrates that the pace of integration of electricity markets is faster than the integration of gas markets. This is another supporting point for considering these markets as relatively autonomous.

**4. Barriers to the CIS Common Power Market**

The creation of a common electric power market faces a number of problems. In our opinion, the basic precondition of the development of the

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⁴ See Vinokurov (2008).
CPM is full liberalisation of the largest – the Russian market which forms the base for the CIS system.

1. In general, in CIS countries there are various models of markets for electric power with different degrees of liberalisation. The creation of the CPM is possible only after liberalisation of the prices, at least in the system’s base market of Russia. *The liberalisation of prices for electric power is expected by 2011. It represents the basic precondition of the CPM.*

2. The barrier to the creation of common markets is the specific structure of the electric power sector, namely the natural monopolies, along with high levels of political regulation. If a state owns transmission networks and basic generation capacities, it will not be inclined to import cheap electric power while domestic power stations lie idle – no matter whether they are competitive or not. Therefore the development of regional trade in electric power demands separation of the commercial interests of generators and distributors.¹⁰

Nevertheless, the experience of NORDPOOL and the integrated electric power market of the three Scandinavian countries, demonstrates that the more dominant national companies do not need to be an insurmountable obstacle. The Scandinavian electricity market is the most efficient integrated regional energy market in the world, dealing with both spot and futures trade. Its experience proves that, if the regulation is efficient enough, a common market may be created even with public companies dominating generation and distribution.¹⁰

3. Membership of the WTO also seems likely to facilitate the creation of a CPM, as it provides a legal foundation for member countries. The accession of Russia and Kazakhstan to the WTO will be a positive factor. Kyrgyzstan, Georgia and Ukraine are already members of the WTO. On the contrary, the progress of Belarus, Tajikistan and Uzbekistan towards membership is limited. In the meantime, the development of a legal base for the CPM will be smoothed by consideration of the requirements of the WTO.

4. There are also a number of technological barriers to the development of a CPM, although, due to the common technological base created in the Soviet Union, these barriers are less significant than in other regions. In particular, the development of a common methodology for

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ⁱ⁰ The establishment of a legal framework is a key element of a CPM. Absence of this framework can lead to serious structural problems. The incident cited below vividly illustrates the danger and economic losses, which may occur when rules are not observed. In June 2007, Ukraine declared its intention to construct a new transmission line around Moldova to provide energy to Odessa region. This decision was related to the 2002 conflict with MoldElektrika, which, as UkrEnergo believed, consumed Ukrainian energy without sanction and refused to buy energy at new prices. UkrEnergo also alleged that there were charges for failing to observe schedules for transit of energy to Odessa region, refusal to regulate the remainder of the energy flow and refusal to follow the instructions of the dispatcher of the Ukrainian company during accidents. www.fin.org.ua/news.php&i=508492, available as of July 2008.
calculating the cost of transit of power is urgent not only in the electric power sector but also in other power markets.

Let us compare the CIS to Central Europe where the creation of a CPM is also pertinent. Research carried out for this region’s power industry describes in detail various technical barriers to the construction of an effective system for trans-border trade in the region\(^\text{11}\). Among them there are the following: insufficient capacity for trans-border transmission of electricity; initial creation of the networks using the principle “local generation – local consumption”; absence of a common methodology for coordination and planning, absence of a regional coordination centre; and technical complexities of trading the energy produced by thermal power plants (TPPs) using gas (more expensive energy source) and wind parks (unpredictable volumes of generation).\(^\text{12}\) Comparing these problems to post-Soviet realities, we can see a more promising situation. From the very beginning, the Soviet system was developed as a single network. This creates suitable preconditions for the rapid expansion of trade in electric power within the CIS.\(^\text{13}\)

Nevertheless, for a CPM to work effectively, a number of technical barriers and obstacles of legal character should be eliminated, including: customs control of interstate overflows of electric power, inappropriate to the requirements of a parallel mode; absence of uniform methods of calculation of tariffs for transit of electric power; discrepancy in some items of national tax legislation with respect to bi- and multilateral contracts and agreements on the development of integrated cooperation of states in the electric power industry.

The draft of the Concept of the Common Energy Market of the EurAsEC defines the following additional obstacles:

- Utilisation of agreements for the division of production leads to a process whereby regional integration should be coordinated with foreign power companies;

- Regional disagreements of a political nature, in particular, on the problem of the Caspian Sea;

- Powerful considerations concerning national energy security and sovereign energy policies (as a rule, targets for national energy security prevail over integration goals).

An integral part of the formation of the CPM of the Central Asian states and Russia is development of the water and energy complex of Central Asia, comprising (a) construction of hydro energy plants in Tajikistan and Kyrgyzstan, (b) construction of transmission lines, and (c) effective regulation of water flows in all Central Asian countries. EurAsEC

\(^{11}\) LaBelle, Kaderjak (2006: 24).

\(^{12}\) The real capacity of German wind parks in 2006 fluctuated between 300 MW and 5000 MW. This leads to complexity not only in planning but also in regulating capacity of the system to absorb all generated energy during production peaks.

\(^{13}\) LaBelle, Kaderjak (2006).
is trying to solve the disagreements surrounding the water and energy network in Central Asia.\textsuperscript{14} We see the key to the solution of this very complicated problem in combining availability of large financial sources (for the construction of additional generating capacities, water reservoirs and effective infrastructure for energy transit) and the creation of effective mechanisms for regional cooperation, which would take into account the vested interests of all countries in the region.\textsuperscript{15}

Creation of a CPM does not necessarily require the conclusion of a uniform agreement covering the whole region. As an alternative, a network of agreements between the region’s states could be possible. This network would be “woven” using two kinds of arrangements: bilateral agreements and multilateral agreements covering sub-regions. The most vivid example of this is Central Asia and Russia. Another power sub-region could be formed between Russia and the Caucasian states. However, we are referring to the technical and economic aspects of the problem, with the understanding that political issues may make both regional projects difficult to implement.

5. EURASIAN INTEGRATION: OBJECTIVE CONDITIONS FOR GOING BEYOND THE BOUNDARIES OF THE POST-SOVIET SPACE

As a rule, discussion of a potential CPM stops at the boundaries of the post-Soviet space. However, the economic logic of a CPM speaks in favour of the geographic extension of the concerned area.

Let us outline some of the perspectives of potential interest to the CIS nations:

\begin{itemize}
  \item Azerbaijan – connection to Iran;
  \item Armenia – connection to Iran;
  \item Turkmenistan and Uzbekistan – Iran, Afghanistan, Pakistan and other South Asian countries;
  \item Kyrgyzstan and Tajikistan – cooperation with China, Iran, India in developing hydro-electric potential; exporting electricity to Pakistan, India, Iran, China, Afghanistan, (as well as CIS countries);\textsuperscript{16}
  \item During the coming years, Russia is planning to execute a gigantic project in the Eastern Siberia, developing coal-fired generation and building transmission lines to China, which may lead to annual exports of 60 billion kWh;
  \item Connecting the common regional energy system with that of the EU, with the view of creating a common market from Lisbon to Vladivostok. This project may be of great importance for Russia, Ukraine, Belarus and Moldova.
\end{itemize}

\textsuperscript{14} The specific context of the water and energy network of the CAR is described in ADB (2005) and EABR (2008).
\textsuperscript{15} Vinokurov (2007).
\textsuperscript{16} The most recent example is an agreement signed by Pakistan, Afghanistan, Kyrgyzstan, and Tajikistan on August 4, 2008, which foresees construction of a transmission line “Central Asia – South Asia 1000” (CASA-1000) connecting Central Asia upstream countries with their South Asian neighbours by 2014.
INTERNATIONAL RAO will be responsible for executing a gigantic project of electric power export from Russia to China. The project is divided into three stages, the first of which should begin in 2008. The Russian company plans to increase the export of electric power to China to 4.5 billion kWh per annum, using the capacities of the Far East power plants, which requires $450 million of investments into transmission capacities.

The two following stages, scheduled to last until 2015 will require more investment, totalling $17 billion in Russia alone. Additional generation capacity created shall provide annual exports of 18 billion kWh from the Urgal coal deposit, where a TPP with the capacity of 3600 MW will be built. Following this, export will be increased to 60 billion kWh with three new plants in Buryat Region and Chita Region (3600, 1200, and 2400 MW). Cash flow generated by this project will amount to $1.2-1.7 billion yearly, depending on the dynamics of electric power prices.

In the western direction, the leading role is attributed to the project of the synchronisation of the energy systems of the CIS and Baltic countries with the energy systems of Central and Western Europe, represented by the Union on Coordination, Production and Transmission of Energy (UCTE). RAO UES was planning to complete a feasibility study on uniting the energy systems of the CIS and Europe in 2008.

Among promising possibilities, the UCTE is considering several options: the first includes Turkey, the second is an outlet for Tunisia and...
Libya which suggests further outlets to the Middle East; thirdly, UCTE is interested in working on synchronic unification of energy systems with the CIS.

Let us note that any Eurasian CPM would assume gradual development grounded in a number of bi- and multilateral agreements.

J. Linn points out that neither Russia nor the rest of the world have realised that the fall of the USSR triggered the process of economic integration throughout Eurasia. We fully subscribe to this view. Due to its geographical position and national economic interests, Russia is directly interested in Eurasian integration, which would not be constrained by the boundaries of the post-Soviet space. Kazakhstan will become a direct ally of Russia in creating Eurasian institutions for economic and political integration. In fact, Kazakhstan’s economic future is directly related to common Eurasian markets, transport corridors and security systems. In our opinion, Kazakhstan is the most “Eurasian” country in the whole continent. The EU, China, India and Iran may become the key partners of the CIS countries in the process of creating a real Eurasian CPM.

One of the most valuable lessons we can learn from the global experience of regional integration is the understanding that les grands projets géopolitiques do not create a reliable foundation for integration. Rather, specific integration projects in particular sectors could trigger progress of real economic and political value. Regional economic integration can begin in key sectors and then expand to the level of institutional integration. These sectors in the Eurasian context may be electricity, transport, telecommunications or agriculture. Undoubtedly, common power markets are among the most promising integration projects due to the strong economic rationale for creating Eurasian common power markets. Moreover, a common electric energy market may turn out to be one of the bases of a continent-wide security system.

6. Conclusions

1. Trade in electric power and mutual investments are at a low level and do not correspond with the sector’s potential. The CIS is a net exporter of electric power, but the actual volumes of import and export are small. CIS countries are capable of more, having large coal and gas reserves with huge potential for energy production, vast hydropower potential, and competitive advantage in power engineering.

In spite of the considerable revival during recent years, mutual investments remain at a low level and are characterised by a one-sided structure. In fact, Russia has made all the investment. Small volumes of mutual trade in electricity and low levels of mutual investment do not correspond to the huge potential of the sector.

2. The CIS and its Electric-Power Council play a leading part in the work to instigate a Common Power Market (CPM). This can be explained

17 Linn (2006); Linn, Tiomkin (2006).
by a number of factors. The urgent need originating in the early 1990s led to cooperation and parallel work on energy networks in the newly independent states, formally a single energy system. At that moment, the Electric-Power Council of the CIS was the only body able to address the many technical issues that had to be solved urgently. Gradually the Electric-Power Council’s work became more and more effective, and essential for the power companies in post-Soviet countries.

3. Power markets (power industry, hydrocarbons, coal, uranium) are specific: it is necessary to combine a complex approach to fuel and energy balance with functional integration in these unique markets. In the 2000s, the EurAsEC began work on creating a common power market (CPM). It goes without saying that, at the level of conception, power markets must be regarded as interrelated, which allows the implementation of the principle of comparative advantages in the process of integrating different countries. Alongside this, power industries may form separate markets with their own specific regulations. The idea of a common power market, which is the basis of the systematic work of the EurAsEC, inadequately reflects the peculiarities of the power industry. In our opinion, the subject that should be considered is the creation of a number of common markets, such as: an electric power market, an oil and gas market, and a coal market. The creation of a uranium market may then follow. In spite of their evident dependence on each other, each of these markets is very specific and consequently should be regulated independently.

4. Creating a common power market entails a number of solvable problems. The completion of the liberalisation of the Russian market, which is the biggest, networked market of the CIS, is one of the most important preconditions for the development of a common power market. In general, the integration of the power market is dependant on the institutional peculiarities of the national electric-power industry in the key countries. Despite this, if an optimal regulative environment is established, a common power market can still be created even with the preservation of a considerable presence of public companies in the generation and distribution of energy.

5. Advancement towards a continental Eurasian common power market is economically rational. Russia and its neighbours are interested in Eurasian integration, which would not be constrained by the boundaries of the post-Soviet space. The very logic of a CPM urges us to go beyond the boundaries of the post-Soviet area. Russia and Kazakhstan are keen promoters of the CPM, as are a number of other CIS countries including Armenia, Azerbaijan, Kyrgyzstan, Tajikistan, Uzbekistan, Turkmenistan, Ukraine and Belarus. Practically all of the CIS countries could gain real advantages as exporters and transmitters of electric power if real electric energy market mechanisms are introduced, thereby dealing with countries of Eurasia such as China, Iran, India, Turkey and EU countries. A CPM for Eurasia would develop gradually, founded on a number of bi- and multilateral agreements.


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Documents


EurAsEC (2007b) Draft Concept of Effective Utilization of Water and Energy Resources of the Central Asian Region.

Other resources


Evgeny Vinokurov “The CIS Common Electric Power Market”

Economic Integration: Industries, Sectors, Issues


