Eurasian Development Bank

The CIS Common Electric Power Market

Sector Report

2008, August

Eurasian Development Bank (EDB) is an international financial institution established to promote economic growth and integration processes in Eurasia. The Bank was founded by intergovernmental agreement signed in January 2006 by Russian Federation and the Republic of Kazakhstan. Negotiations are currently underway with a number of neighboring countries. Electric power, water and energy, transportation infrastructure and high-tech and innovative industries are the key areas for Bank's financing activity.

The Bank, as part of its mission, provides quality research and analysis of contemporary development issues and trends in the region with particular focus on Eurasian integration. The Bank conducts regular conferences and round tables addressing various aspects of integration. In 2008, the Bank launched quarterly academic and analytical Journal of Eurasian Economic Integration and an annual almanac EDB Eurasian Integration Yearbook. In addition, every fortnight new issues of information digest are released covering regional integration, development banks' activities and investment projects in the post-Soviet space.

The Bank's Strategy and Research Department also publishes detailed Industry and Country Analytical Reports. It also plans to realise a number of research and technical assistance projects. "System of Indicators of Eurasian Integration" project is the first in the project pipeline.

Address:

Republic of Kazakhstan
050000, Almaty, Panfilov St, 98

Eurasian Development Bank

Tel.: +7 (727) 244 40 44
Fax: +7 (327) 244 65 70, 291 42 63
E-mail: editor@eabr.org
http://www.eabr.org

Contacts of the author

Evgeny Vinokurov
Head of Economic Analysis Division, Strategy and Research Department, EDB

E-mail: vinokurov_ey@eabr.org
Tel.: +7 (727) 244044, ext. 6146

Contents

Tables

Figures

Executive Summary

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 leading role of the CIS Electric-Power Council. 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 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.

1. Introduction

An effective electric-power industry is one of the most important infrastructural bases 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 review 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 obtrusive 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 forming 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 review begins by considering the condition and dynamics of mutual 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. Following 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 briefly stated in the Executive Summary. Appendices contain an analysis of the international experience of common power markets and related statistical information.

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 between countries. One example is the Ekibastuz Heat power plant-2, 50 percent of which belongs to INTER RAO. A significant part of the energy generated in this plant is exported to Russia.

However, volumes of trade in electric power can adequately characterise overall levels of integration. In fact, the volume of electric power exchange 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 substandard 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.

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 potential, 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).

In 2007, export deliveries from Russia to Kazakhstan totalled 2 168 million kWh, 299 million kWh more than in 2006. In 2007 3 263 million kWh was imported to Russia from Kazakhstan, 413.57 million kWh less than in 2006, which is a result of increased consumption in North Kazakhstan.[1]

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

[1] The data of INTER RAO. http://www.interrao.ru/busines/, available as of July 2008.

Table 1. Export of electric power to CIS countries and EurAsEC in 2004-2007 (according to data from exporting countries; million kWh)*

Exporting Countries	Total	To countries		Importing countries					
		CIS	EurAsEC	Belarus	Kazakhstan	Kyrgyzstan	Russia	Tajikistan	Uzbekistan
2004									
Belarus	798	0,4	-	-	-	-	-	-	
Kazakhstan	7403	7403	7403	-	-	-	7403	-	
Kyrgyzstan	3382	3381	3381	-	1258	-	1800	323	0,1
Russia	19201	6683	3784	1511	2272	-	-	-	
Tajikistan	4451	4423	4423	-	-	54	-	-	4369
2005									
Belarus	901	19	19	-	-	-	19	-	
Kazakhstan	3978	3978	3978	-	-	-	3978	-	
Kyrgyzstan	2685	2684	2684	-	1531	-	936	217	
Russia	22568	9212	6599	4680	1919	-	-	-	
Tajikistan	4258	4219	4219	-	68	4	-	-	4147
2006									
Belarus	1120	55	55	-	-	-	55	-	-
Kazakhstan	3286	3286	3286	-	-	-	3286	-	-
Kyrgyzstan	2509	2508	2508	-	2086	-	-	422	-
Russia	20927	5942	4214	2345	1869	-	-	-	-
Tajikistan	4231	4183	4183	-	-	-	-	-	4183
2007									
Belarus	-	-	-	-	-	-	-	-	-
Kazakhstan	3528	3528	3528	-	-	-	3528	-	-
Kyrgyzstan	2388	2387	2387	-	1217	-	-	301	868
Russia	18468	5386	4824	2653	2171	-	-	-	-
Tajikistan	4259	4208	4208	-	-	-	-	-	4208

Source: Statistic Committee of the CIS.

** Data of Uzbekistan is not available*

Table 2. Imports of electric power from CIS countries and EurAsEC in 2004-2006. (according to data from importing countries in million kWh)*

Exporting Countries	Total	To countries		Importing countries					
		CIS	EurAsEC	Belarus	Kazakhstan	Kyrgyzstan	Russia	Tajikistan	Uzbekistan
2004									
Belarus	4050	1511	1511	-	-	-	1511	-	-
Kazakhstan	5234	5234	5234	-	-	2949	2285	0,8	0,0
Kyrgyzstan	54	54	54	-	-	-	-	54	0,3
Russia	12154	7367	7116	-	5316	1800	-	-	-
Tajikistan	4810	4810	4810	-	-	329	-	-	4481
2005									
Belarus	4936	4684	4680	-	-	-	4680	-	-
Kazakhstan	4552	4552	4552	-	-	2508	1976	68	-
Kyrgyzstan	0,2	0,2	-	-	-	-	-	-	0,2
Russia	10292	7021	3917	19	2962	936	-	-	-
Tajikistan	4508	4508	230	-	-	230	-	-	4278
2006									
Belarus	5479	4847	2345	-	-	-	2345	-	-
Kazakhstan	4057	4057	4057	-	-	2127	1930	0,02	-
Kyrgyzstan	0,2	0,2	0,2	-	-	-	-	-	0,2
Russia	5171	4600	3785	55	3730	-	-	-	-
Tajikistan	4839	4839	4839	-	-	425	-	-	4414
2007									
Belarus	4344	3405	2653	-	-	-	2653	-	-
Kazakhstan	3665	3665	3665	-	-	1287	2378	-	-
Kyrgyzstan	0,2	0,2	0,2	-	-	-	-	-	0,2
Russia	5670	5151	3308	-	3308	-	-	-	-
Tajikistan	4361	4361	4218	-	-	303	-	-	3915

Source: Statistics Committee of the CIS.

** Data of Uzbekistan is not available*

	2004	2005	2006	2007
Export, total	35235	34390	32073	28643
Export, CIS	21890	20112	15974	15509
Import, total	26302	24288	19546	18040
Import, CIS	18976	20765	18343	16582

Table 3. Import and export of electric power by the CIS, million kWh

Source: Statistics committee of the CIS

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.

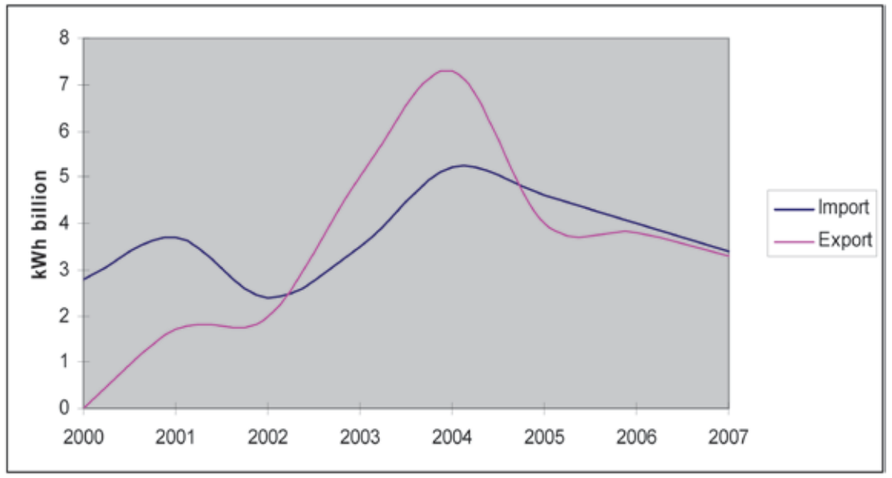
Let's consider mutual investment. After the ruinous 1990s, mutual investments in the electric power of the CIS became a reality in the 2000s. However, **there are only Russian investments in the CIS countries**. During recent years, RAO UES has acquired assets in Armenia, Georgia, Kazakhstan and Moldova. 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.

	2000	2001	2002	2003	2004	2005	2006	2007
Production	51,6	55,4	58,3	63,9	66,9	67,8	71,7	76,3
Import	2,8	3,7	2,4	3,5	5,2	4,6	4,0	3,4
Consumption	54,4	57,4	58,7	62,4	64,8	68,4	71,9	76,4
Export	0,0	1,7	2,0	5,0	7,3	4,0	3,8	3,3

Table 4. Kazakhstan: production, export and import of electric power in 2000-2007, billion kWh

Source: Ministry of energy and mineral resources of the RK.

Figure 1. Import and export of energy in Kazakhstan, 2000-2007.



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 Electricit 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 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 5. Trans-border investment in the electric power industry in the CIS

Acquirer	Acquired entity	Share, %	Amount, $ mln	Year	Notes
Inter RAO UES	Distribution company Telasi (75%), AES Mtcari (100%), AES Transenergy (50%) (Georgia)		57	2003	
JSC Ekibastuz Centre (RK) and Inter RAO EES	JSC Ekibastuz NPP-2, Kazakhstan	JV (50/50)	90	2003	
Inter RAO UES	Sevano-Razdan cascade of 7 HPPs, "Armenian electric networks" (Armenia)			2003	
JSC International Energy corporation, EMFESZ (Hungary)	Moldova thermal power station ((Moldova, Transnistria)		39,2 + 163	2003	In July 2008, INTER RAO acquired further 49% from the Hungarian EMFESZ, thus consolidating 100% of shares.
JSC RAO UES and Government of Tajik Republic	JSC Sangtudin HPP-1, Tajikistan	JV (50/50)	500	2005	2007 - 142 million USD, planned for 2008 - 164.3 million USD. Total amount of investment in the project - 720 million USD.
JSC Tekhsnabeksport, JSC Atomstroyexport, JSC NAK Kazatomprom	JSC Centre of Uranium enrichment	JV (50/50)		2006	In 2008, Armenia entered the project
JSC Tekhsnabeksport, JSC Atomstroyexport, JSC NAK Kazatomprom	JV Nuclear Power Plants	JV (50/50)		2006	Development and marketing of the nuclear reactor VBER-300

Sources: Kuznetsov (2007); Kheifets, Libman (2008); author's database.

2. Mutual Trade and Investment in the Electric Power Sector of the CIS

Table 6. Foreign assets of INTER RAO

Assets	Country	Type	Capacity, length	Comments
Sevano-Razdan cascade of HPPs (in operation)	Armenia	Generation	560 MW	Includes 7 HPPs
Razdan thermal power station (in operation)	Armenia	Generation	1110 MW	Russian state property
JSC Electric Networks of Armenia	Armenia	Distribution	29600 km	Acquired by Midland Group for $73 mln
JSC Armenian nuclear power plant (in operation)			815 MW	Managed by INTER RAO
Mtkvari Energetika (9th and 10th blocks of the Tbilisi HPP)	Georgia	Generation	600 MW	2 units of 300 MW
Telasi (75%)	Georgia	Distribution	5658 km	
Khrami HPP-1 and Khrami HPP-2 (in operation)	Georgia[2]	Generation	220 MW	Of 110 MW
Sandgudin HPP-1	Tajikistan	Generation	670 MW	1st power unit launched in 2008
INTER RAO Ukraine	Ukraine	Equipment supply	-	
Moldovan TPP	Moldova	Generation	2520 MW	49% sold to unknown buyer (supposedly Gazprom) in 2007
Ekibastuz TPP-2 (50%)	Kazakhstan	Generation	1000 MW	2 units of 500 MW; it is planned to construct a 3rd energy unit of 500 MW
RAO Nordic Oy	Finland	Trade	-	Trader in NordPool
TGR Enerji	Turkey	Trade	-	Trader

Source: Inter RAO data.

[2] Georgian assets of INTER RAO may suffer (nationalisation is one option) as a consequence of the Russian-Georgian war (August 2008).

E. Vinokurov (2008) The CIS Common Electric Power Market. Sector Report. © Eurasian Development Bank

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.[3]

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.[4] 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 implementation of the decisions adopted there and ensures coordination between various energy markets.

[3] Smirnov (2007).

[4] Primbetov (2006).

The documents developed by the EurAsEC:

- The Concept of Effective Utilisation of Water and Energy Resources of the Central Asian Region (CAR).[5] 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.[6] 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.[7]

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, represented 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

[5] 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).

[6] Vinokurov (2007).

[7] 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.

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 marketand a common coal market. After this a common uranium market could follow. In spite of the visible interrelation, the specifics of these markets demand their independent regulation.[8]

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.[9] 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.

[8] The authors of the Concept of the Common Energy Market EurAsEC recognise the specific markets in the final parts of the documents, proposing to sign separate agreements on hydrocarbons and electric power.

[9] See Vinokurov (2008).

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 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. [11]

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 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[12]. 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).[13] 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.[14]

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 is trying to solve the disagreements surrounding the water and energy network in Central Asia.[15] 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

[10] ADB (2005: 18).

[11] 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.

[12] LaBelle, Kaderjak (2006: 24).

[13] 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.

[14] LaBelle, Kaderjak (2006).

[15] The specific context of the water and energy network of the CAR is described in ADB (2005) and EABR (2008).

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.[16]

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.

[16] Vinokurov (2007).

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:

- Azerbaijan – connection to Iran;
- Armenia – connection to Iran;
- Turkmenistan and Uzbekistan – Iran, Afghanistan, Pakistan and other South Asian countries;
- 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);[17]
- 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;
- 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.

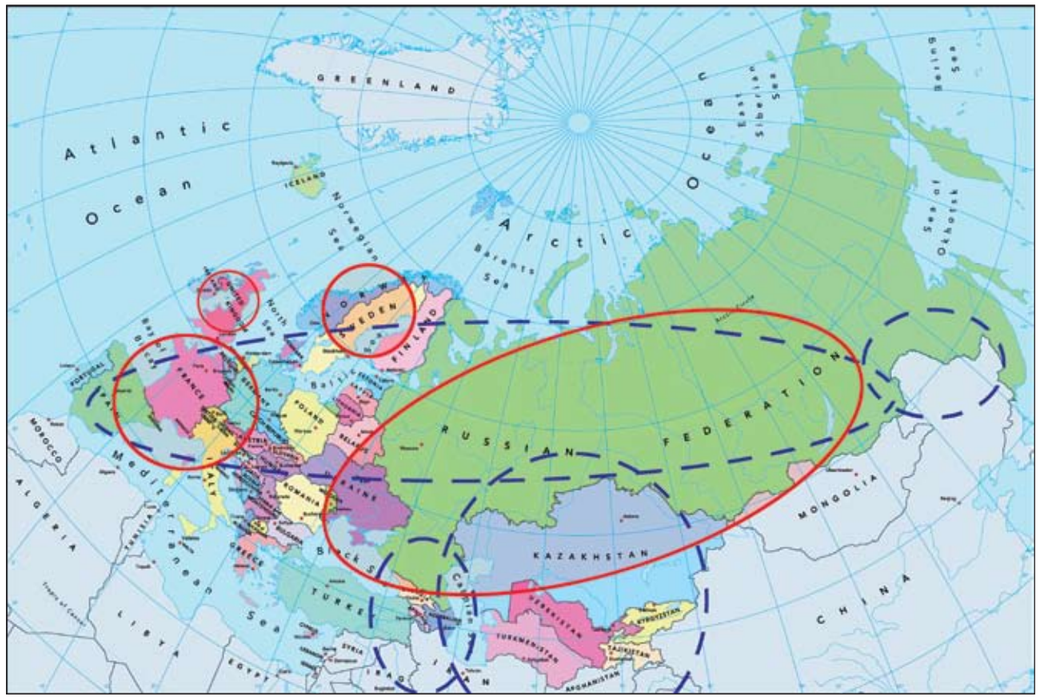


Figure 2. Existing and potential regional and sub-regional electric energy markets

INTER 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.[18] 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.

[18] Linn (2006); Linn, Tiomkin (2006).

Appendix 1. International Experience of Regional Power Markets

CREATION OF REGIONAL AND SUB-REGIONAL ENERGY MARKETS (POOLS) is at the top of the agenda in many regions of the world: the EU, North America, South America, South-East Asia[19]. The level of economic development is not the determining factor. On the contrary, development of a CPM is considered to be the strongest tool for sustainable economic development and regional economic integration. For example, African nations have undertaken significant efforts to create integrated markets, namely SADC (Southern African Power Pool, from 1985) and ECOWAS (West African Power Pool). The cost of the latter is estimated to be 15 billion dollars over 10 years. A vital issue during the creation of a CPM is not only significant investment, but also the necessity to establish harmonised legal frameworks.[20] The most advanced sub-regional market today is NordPool, which unites the Scandinavian countries. The Northern Europe regional electricity market was liberalised and integrated more than ten years ago[21], and today it serves in many respects as a model for other European regional markets, as well as for the CIS.

The process of the integration of national and regional power networks and systems is an objective peculiarity of the present development of world power and reflects the tendency towards globalisation in the power markets.

The process of the integration of national and regional power markets between international organisations over the past 20 years is happening in every continent. At present, interstate power associations and markets have been established between nation states in Northern America (NAFTA), South America (MERCOSUR), Europe, Africa, and the Asia-Pacific region. The process of integration in different parts of the world is based on various preconditions, organised according to various regional requirements and under a variety of schemes.

NORTH AMERICA – the USA, Canada and Mexico (participants of NAFTA) began organisation of a trilateral energy market after long negotiations and coordination. To be accurate, at present, the North American energy market is a set of several bilateral agreements between the USA and Canada and the USA and Mexico.

Up until the end of the 1980s, the GATT regulated trade of electricity and gas in the region.

It is worth mentioning some specific features relating to the united power market of Northern America:

- Because of the big difference in size and economic development level of NAFTA member states, agreements are mostly bilateral;
- Different national and sub-national structures of management of energy system make their international integration difficult;

[19] Appendix 1 of this review is based on the materials of the draft Concept of the Formation of Common Energy market among the EurAsEC member states (Appendix 1 "General Patterns and Specifics of Formation of Regional Energy Markets").

[20] UNECA (2006: 15).

[21] Vlasova (2008).

• The national interests of the member states condition trans-border trade of energy under NAFTA.

Besides, the conditions that regulate the trade of electric power and fuel between Canada and the USA are very different from the conditions set between the USA and Mexico. Unlike Canada, Mexico demanded to be excluded from the Agreement on free trade and introduced property restrictions in the sphere of power for foreign investors, and restrictions on free access for importers of electric power from the USA, etc.

The power infrastructure in NAFTA member countries is not uniform. For example, Canada can export up to 17 % of its electric power to the USA, Mexico - only 2,5%. It is necessary to note that work on the elimination of these disproportions is now being actively conducted. In particular, in Mexico two projects to export electricity to California are being implemented. Additionally, Mexico has been invited to participate in the electric power pool of the state of Texas.

International trade of electric power under NAFTA is regulated by national rules. In the USA, the Ministry of Power, Energy, and Mineral Resources (the permits for construction of trans-border power lines and export of electric power) and the Federal Energy Regulatory Commission (tariffs for wholesale supplies of electric power between states and transport) are in charge. In Canada, an independent federal commission, NEB, regulates the export of electric power, which licenses exporting companies for up to 30 years. Moreover, the electricity regulating bodies of Canadian provinces are also engaged in the regulation of international power flows. In Mexico all import-export transactions in the power markets are regulated by the state via an independent agency (Energy Regulatory Commission, CRE).

Experts presume that the development of power cooperation under NAFTA will continue at the present level of mutual agreement. This is supported by a number of factors: the large distances for transport of power resources, distinctions in the level of economic and power development, incomplete integration of power infrastructure, autonomy of the legal and regulating systems.

In NAFTA there is no general (coordinated) strategy for the development of an integrated power infrastructure between member states. Mexico's suggestions for the elimination of disparities between the region's nations using the experience of the European Union are not yet supported by the USA or Canada. EU experience is in the formulation of long term development objectives (for 20-30 years) for those countries which are less developed, with achievement of these objectives based on special investment programs financed by the EU. In the EU such aid is received by Spain, Portugal, Ireland and Greece, and, recently, the new member states of Central and Eastern Europe.

In Latin America a combination of different factors, such as the financial crises, deficit of investments and transition to neo-liberal models of economic development, compelled national governments in this region to privatise a large number of public companies, including many in the electricity sector. Simultaneously, and on a different basis, the process of interstate integration in the region was begun. The catalyst for this process was the establishment of NAFTA in 1994, which gave Mexico the privilege of access to the North American market. This event inspired the South America nations to create MERCOSUR, as well as the Central American Common Market.

The process of privatisation in the power sector did not imply and did not push the process of regional integration. Moreover, in a number of Latin American countries, where privatisation of the power sector is not considered even as a long term objective, the idea of the creation of a regional power market is ardently supported (Costa Rica, Uruguay, Paraguay).

In the European Union, the process of privatisation, decentralisation and integration within the power sector is much more connected with the process of integration. The general aims of the European countries with regard to the power sector (in particular, power security) and the

process of integration pushed certain of the region's states (France) to take more action in the field of privatisation and decentralisation.

In Europe, the unification of the electricity and natural gas markets is the result of the general integration of the countries of this region and the general goals in energy policies, such as the need for energy security, environmental issues etc.

Another good example of an international energy market is NORDPOOL, the Scandinavian electric power market; an efficiently functioning regional market in electric power. It includes national public companies, while hydropower accounts for the bulk of generation. NORDPOOL effectively provides all conditions for both present and future trades in power and is a good example of the more "liberalised" unions of West Europe.

The process of unification of national power markets into regional (i.e. international) ones takes different forms in various regions. In South America under the framework of the MERCOSUR agreement, the process is based on the compatibility of the resource bases and growth in consumption of power resources in the leading country of the region - Brazil. This provides the incentive for the region's nations to create a unified mechanism for the regulation of the regional market. On the contrary, in the Central American region, the states try to create the basis for a regional market by developing power infrastructure and a regulatory framework. The basic difference between organisations such as NAFTA and MERCOSUR from the European Union is also in the absence of any plans for political integration. Moreover, NAFTA and MERCOSUR do not provide for the creation of super-national controls in power. Instead, there are several working groups in which new international agreements are developed and discussed. Thus, NAFTA and MERCOSUR are methods for coordination and implementation of the policy of cooperation by means of national public authorities and national experts, rather than an independent international organisation.

The analysis of foreign experience in the creation of unified power markets enables us to formulate the following general provisions.

Parameters and efficiency of a common power markets are determined by three basic directions of development:

• Development of the energy infrastructure (physical availability of connections between national markets)

• Development of power market regulatory organisation (legal entity)

• Development of commercial integration (general economic environment).

The development of a power infrastructure requires moving from an isolated national power supply system to the creation of trans-border power communications by means of coordinated investment efforts in the expansion of these communications and formation of integrated power networks, making the market a uniform power system.

Legal association is achieved by means of different relations such as independent national systems of regulation and unification of regulation methods through coordination of activities of regulatory bodies, and creation of a uniform regional regulating body.

The general economic environment (commercial integration) in its development passes through four stages: from the national power market to the market where trans-border trade plays an essential role and foreign ownership is allowed, to a regional spot market with market pricing, and then finally to a regional futures market.

Analysis of global experience of the creation of interstate power associations identifies two basic directions during integration: regulated integration and a liberal process of creation of interstate power markets (liberal integration).

In "regulated" integration, states tend to create a system of long-term agreements jointly solving problems of development, jointly reducing risks, maintaining power security, and

providing a steady and reliable power supply to national consumers, who are by default participants of the agreement. In the case of "liberal" integration, the task of maintenance of free competition of participants of the integrated market, opening of the markets for end users, division of vertically integrated power companies, and transparent systems of formation of tariffs, is necessary to create the power infrastructure.

When comparing integration of power markets (electric power and gas) under various organisations, attention is particularly drawn to the faster rates of integration of electricity markets compared to gas markets. In many respects, this can be explained by a higher degree of similarity between technological and economic conditions of functioning and development of the electric power industry in different countries, and the system-oriented character of infrastructure.

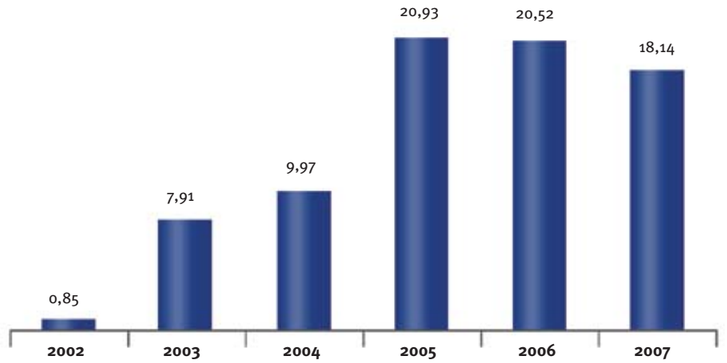
The analysis demonstrates that in the post-Soviet area gradual transition from controllable to regulated integration is the preferred option, with probable subsequent liberal integration (if the necessary conditions are created and accepted through corresponding political decisions by the state-participants of the agreement). This seems to be the most comprehensible legal basis for a common power market within the framework of EurAsEC, on the basis of international mutual relations as stipulated by the rules of the WTO, other international agreements and frame documents of EurAsEC.

Appendix 2. Russian Electric Power Exports and Imports

Exports[22]

Russian export peaked in 2005 but had decreased by 10% by 2007 due to increased domestic consumption.

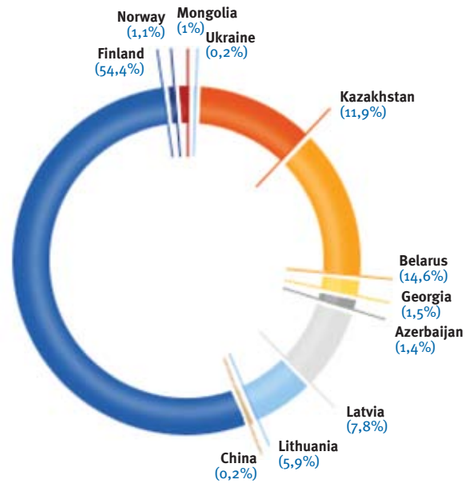
Figure 3. Electric power exports in 2002 – 2007 (billion kWh)



Source: http://www.interrao.ru/busines/export/, available as of June 2008.

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 4. Energy Exports in 2007



[22] Appendix 2 of this review is based on INTER RAO data.

Azerbaijan. Export of electric power to Azerbaijan in 2007 was 250.0 million kWh, which is three times (510 million kWh) less than in 2006. The demand for Russian electricity decreased as new capacity was launched.

Georgia. In 2007 the export of electric power to Georgia was 280 million kWh, approximately 50% less (290 million kWh) than in 2006. The high water flow of the Inguri reservoir, unregulated issues of international relations and replacement of Russian imports with supplies of electric power from Azerbaijan and Turkey primarily caused this reduction in supply.

Belarus. Energy exports from Russia amounted to 2653.4 million kWh, which was 308,2 million kWh more than in 2006 in connection with the growth of consumption.

Ukraine. Exports to Ukraine in 2007 were tiny at 34.7 million kWh.

Kazakhstan. In 2007, exports to Kazakhstan were at the level of 2167.7 million kWh, which is 298,91 million kWh more than in 2006.

Latvia. In 2007 the demand for Russian electric power in Latvia increased. In comparison with 2006, exports increased by 330,3 million kWh to 1416.7 million kWh.

Lithuania. In 2007, the supplies of the Russian electric power to Lithuania stood at 1062,8 million kWh, which is 289.1 million kWh less than in 2006.

Finland. In 2007 supplies of Russian electric power to Finland decreased to 9870.9 million kWh which is 1279,44 million kWh less than in 2006, caused by declining spot prices in the NordPool market and long unplanned repairs to Unit 1 of the Northwest Thermal power station.

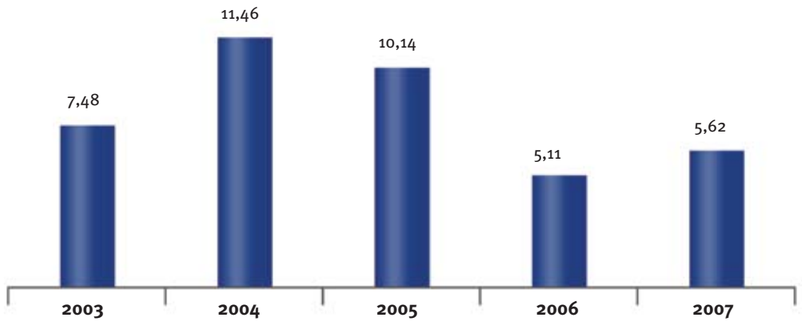
Mongolia. Electricity imported from Russia is primarily used for covering the peak demand as well as to supply consumers living in isolated frontier areas close to Russia. In 2007 the supply of Russian electric power to Mongolia stood as 184.5 million kWh, which is 10,3 million kWh more than in 2006.

China. Due to growing tariffs set Russia for exports of electric power in the Far East, there were no supplies of electric power to China in 2007.

Imports

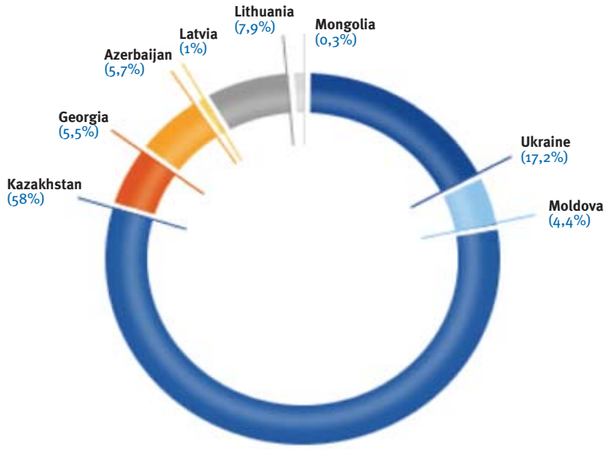
In 2007 the total import of energy by the INTER RAO UES was 5.6 bln kWh which is 0.5 bln kWh (about 10%) more than in 2006. In general, last two years witnessed a considerable decrease in imports compared to 2004-2005. The reasons are quite evident: growing economies of Ukraine and Kazakhstan require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

Figure 5. Imports of electric power in 2003 – 2007 (billion kWh)



Source: http://www.interrao.ru/busines/import/, as of June 2008.

Figure 6. Energy imports by country, 2007.



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%.

Lithuania. Supplies of energy from Lithuania (446.1 mln kWh) targeted the Kaliningrad Region of Russia.

Ukraine. The import of electricity from Ukraine in 2007 amounted to 965.9 mln kWh, which is 467.8 mln kWh more than in 2006.

Kazakhstan. 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.

Literature

Documents

CIS (1992) **Agreement on Coordination of Intergovernmental Relations in Electric-Power Sector of the CIS**. Approved by the Council of the Heads of the CIS State, February 14, 1992.

CIS (1998) **Agreement on Provision of Parallel Work of Electric Power Systems of the CIS countries**. Council of the Heads of the CIS States, November 25, 1998.

CIS (2005) **Strategy of Interaction and Cooperation of CIS Member States in the Electric Power Sector for the period until 2020**. Approved by Electric Power Council of the CIS, May 26, 2005.

CIS (2005) **Concept of Common Power Market of the CIS Member States**. Adopted by the Council of the Heads of the CIS States, November 25, 2005.

CIS (2007) **Agreement on Forming the Common Power Market of the CIS Member States**, May 25, 2007.

EurAsEC (2007a) **Draft Concept of the Common Energy Market**.

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

Other resources

ADB (2005) **Electricity Sectors in CAREC Countries. A Diagnostic Review of Regulatory Approaches and Challenges**. Manila: ADB.

EDB (2008) **Water and Energy Resources of Central Asia: Utilisation and Development Issues**. Industry Report. Almaty: EDB. Available at www.eabr.org

Heifetz B., Libman A. (2008) **Corporate Integration: an Alternative for the Post-Soviet Space**. Moscow: LKI Publication.

Kuznetsov A. (2007) **Internationalization of the Russian Economy: Investment Aspect**. Moscow: ComBook.

LaBelle M., Kaderjak P. (2006) **Towards More Integration of Central and Eastern European Energy Markets**. Regional Centre for Energy Policy Research, Budapest: Corvinus University of Budapest.

Linn J., Tiomkin D. (2006) The New Impetus towards Economic Integration between Europe and Asia. **Asia Europe Journal**, Vol. 4, Issue 1 (April): p. 31-41.

Linn J. (2006) **Liberal Eurasianism**. Kommersant No. 220(3551) dated 24.11.2006

Primbetov S. (2006) Speech at the SPECA Economic Forum, 25-26 June, Baku. www.unescap.org/oes/SPECA/Meetings/EconomicForum/2006/documents/Russian/EF_Statement_EurAsEC.doc, available as of June 2008.

Smirnov S. (2007) Energy Empire CIS, **Trade and Industry News**, 23 October.

UNECA (2006) Assessing Regional Integration in Africa II. Rationalizing Regional Economic Communities. Addis Ababa: UN Economic Commission for Africa.

Vinokurov E. (2007) Investments and Cooperation in Hydropower Sector of Central Asia. **The Continent of Partnership**, September, pp. 42-52. Available at www.eabr.org/media/img/rus/publications/vestnik/kontinent-septem.pdf

Vinokurov E. (2008) **Nuclear Energy Complexes of Russia and Kazakhstan: Development and Cooperation Prospects**. April. Almaty: EDB. Available at http://www.eabr.org/rus/publications/AnalyticalReports/

Vlasova O. (2008) Somebody must pay. Interview with the Michael Lilius. **Expert** No.5, February 10.

Journal of Eurasian Economic Integration

The *Journal of Eurasian Economic Integration* is a quarterly academic and analytical journal published in Russian by the Eurasian Development Bank. The members of the Editorial Board and Advisory Council are distinguished academicians, practitioners and experts in regional integration. *Eurasian Economic Integration* brings together academic and analytical articles, reviews of books relating to regional integration, interviews and quarterly chronicles of regional integration. With its focus on economics, the journal is a rich source of material addressing a broad range of issues specific to Eurasian integration. These include integration theory and its relevance to the development context; economic integration (trade, investment, financial institutions); institutional integration; cooperation issues in the post-Soviet space; and international experience of regional integration. The first issue was published in the third quarter of 2008.

Requirements for submissions. Papers should be sent by e-mail to editor@eabr.org for blind review. There are no strict limitations on the length of articles. However, the editorial board recommends authors to adhere to 6,000-8,000 words or 30,000-40,000 characters. In addition to the main text, authors must submit a brief author(s') biography (100-150 words), executive summary (100-150 words) and bibliography. These materials must be attached in a separate file.

EDB Eurasian Integration Yearbook

Eurasian Integration Yearbook publishes wide range of articles and other materials in English language on theory and practical aspects of Eurasian integration. The major part of the annual Yearbook consists of English versions of selected articles published in the Journal of Eurasian Economic Integration and other analytical publications of EDB. These will be supplemented by integration chronicles for the respective year. The Yearbook will improve access of the world community to the best papers on various issues of regional integration published in Russian language. Apart from papers published in the Journal of Eurasian Economic Integration, papers written specifically for the Yearbook are also welcome (submission in English or Russian).

Industry Reports

As of today the following Industry Reports have been published and distributed:

- Nuclear Energy Complexes in Russia and Kazakhstan: Prospects for Development and Cooperation. April 2008. In Russian.
- Water and Energy Resources in Central Asia: Utilization and Development Issues. April 2008. In Russian.
- The CIS Common Electric Power Market

The following Industry Reports are in the process of preparation:

- Integration of Stock Markets
- The EurAsEC Transport Corridors

Consultancy

The Bank provides consultancy services to its strategic partners and clients. The Bank's Strategy and Research Department has in-house expert resources and can involve specialists from other departments, such as project managers, corporate financing, treasury, legal department. External experts from the extensive pool of CIS countries' experts could be mobilized to work on consultancy projects.

Areas of expertise:

- Analysis of current status and dynamics of development in selected sectors in the member states of the Bank and other EurAsEC countries;
- Financial markets analytical reviews in the EurAsEC countries;
- Economic and legal analysis of integration agreements and institutions in the Eurasian space;
- Development banks' operations and activities in the CIS countries and issues of cooperation

Contacts

Mr. Vladimir Yasinskiy
Head of Strategy and Research Department,
member of Board, EDB
E-mail: yasinskiy_va@eabr.org
Tel.: +7 (727) 2446875

Mr. Evgeny Vinokurov, Ph.D.
Head of Economic Analysis Division,
Strategy and Research Department, EDB
E-mail: vinokurov_ey@eabr.org
Tel.: +7 (727) 244044, ext. 6146