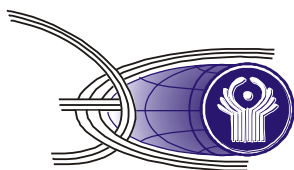


Draft



Approved by the Decision of the CIS
Electric Power Council

Protocol № ____ dated _____ 2017

Joint Summary Report

EURELECTRIC and CIS Electric Power Council
on the Monitoring of the “Road Map on Key
Environmental Protection Issues of the EU and CIS
Power Markets Integration” in Environment, Energy
Efficiency and Renewable Energy
2015 – 2016
(in a part of the CIS)

Joint Working Group of CIS EES - EURELECTRIC "Environment"

Moscow

2017

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Introduction

One of the strategic goals of the CIS Electric Power Council is to organize a parallel operation of the CIS countries energy systems alliance with the unified energy systems of the countries of the European Union. To solve this problem, the CIS Electric Power Council together with the European Electricity Union EURELECTRICK are working on the development of common approaches to solving legal, economic, technical, technological, operational and environmental problems.

For the development of cooperation in the field of environmental protection, EURELECTRIC-EES CIS created the Joint Working Group "Environment".

In 2005 the Joint Working Group developed a comparative report on assessment of the state of environment protection in two regions “Key Aspects of Environment Protection of the EU and CIS Countries Electricity Markets Inegration”. The Report contains description of the EU and CIS legislation on the air basin protection, climate change, protection and efficient use of water resources and on wastes management. The Report gives a comparison of the environmental impact levels of power capacities in the EU and the CIS.

Based on the Report, the Action Plan for the implementation of the Roadmap for Key Environmental Aspects of the EU and the CIS Electricity Markets Integration was developed and approved at the 28th meeting of the CIS EES on October 27/

The Roadmap is a plan for the phased development of compatible conditions in the field of environmental protection in the EU and CIS countries, consisting of four phases, starting with the "current situation" (Phase Zero) to complete the opening of wholesale markets and the beginning of the preparation for full market opening (Phase Three). Each phase corresponds to a higher level of compatibility, which is accompanied by a corresponding increase in the level of mutual opening of the EU and CIS markets in these areas.

A Joint Report on the Monitoring of the Environment Roadmap is issued every two years and includes statistical reports of the CIS EPC and EURELECTRIC carried out in the compatible parameters. Climate change, energy efficiency, renewable energy and other environment issues have been identified as priority issues.

The present Joint Summary Report is prepared on the basis of data of the CIS Electric Power Council Consolidated Report of EURELECTRIC and CIS Electric Power Council on monitoring of the "Roadmap on Key Environmental Protection Issues of the EU and CIS Power Markets Integration” for 2015 -2016 (in the part of the CIS).

1. Regulatory framework for energy efficiency, renewable energy and environmental protection of the electricity industry

1.1 European Union

1.1.1 Emissions trading scheme, energy efficiency, renewable energy (RES)

1.1.2 The basic legislation in the field of environmental protection

1.2 Commonwealth of Independent States

1.2.1 Energy efficiency and energy saving

The CIS Member States Cooperation Agreement in the Area of Energy Efficiency and Energy Saving, dated 7.10.2002.

The CIS Member States Interaction Guidelines and Principles in the Field of Energy Efficiency and Energy Saving, dated 11.03.2005

The CIS Member States Cooperation Concept in the Field of Energy , dated 20.11.2009 approved by the CIS Governmental Council November 20, 2009 and the Plan of Priority Measures on Implementation of the Concept of the CIS Member States Cooperation in the Energy Sphere, approved by the CIS Governmental Council May 21, 2010

The Model Act "On Energy Saving" (adopted at the twelfth meeting of The CIS Inter-Parliamentary Assembly, N 12-5 decision dated December 8, 1998)

1.2.2 Ecology in Electric Power Industry

The Cooperation Agreement in the field of ecology and environmental protection, adopted by the Council of Heads of the CIS Governments, February 8, 1992

The Cooperation Agreement in the field of environment protection of the States-Participants of the Commonwealth of Independent States dated May, 31st, 2013.

The Model Environmental Code (adopted at the twenty-seventh plenary meeting of the CIS Inter-Parliamentary Assembly, Decision № 27-8, dated November 16, 2006)

The Model Act "On Strategic Environmental Assessment" (adopted at the thirty-sixth plenary meeting of the CIS Interparliamentary Assembly, Decision, N 36-7 on May 16, 2011)

The Model Act "On Prevention and Integrated Control of Pollution" (adopted at the thirty-first plenary meeting of the CIS Interparliamentary Assembly, Decision № 31-8 on Nov. 25, 2008)

The Model Act "On Environmental Safety" (adopted at the twenty-second plenary meeting of CIS Interparliamentary Assembly, Decision N 22-18 dated November 15, 2003).

The Electric Power Council of the CIS is an active participant of the Commonwealth states cooperation in the field of environmental protection and "green energy" development. The EPC CIS Regulations empower the Council to coordinate preparation and harmonization of standards and rules in construction and operation of electric power units, assist the development and implementation of joint environmental programs, recommendations on energy efficiency in the electricity sector.

In 2008, at its 33rd Session the CIS Electric Power Council decided to establish a permanent CIS EPC working group "Environment". Carrying out monitoring of the "Road Map on key environmental issues of interconnection of electricity markets in the EU and the CIS", exchange of experience and the facilitation of development and implementation of environmental legislation of the CIS countries became principal tasks of the group.

1.2.3 Renewable Energy Sources

The CIS States-participants Cooperation Agreement in the Field of Energy Efficiency and Energy Saving, October 7, 2002

The CIS states-participants Main directions and principles of interaction in the field of energy efficiency and energy saving (approved by the CIS Economic Council, March 11, 2005)

The CIS Economic Council Decision dated December, 12th, 2008 «On course of performance of the CIS states-participants Cooperation agreement in the Field of energy efficiency and energy saving assurance dated October 7, 2002 and the CIS Economic Council Decision dated March 11, 2005 «On the Basic Areas and Principles of the CIS states-participants interaction in the Field of Energy Efficiency and Energy Saving Assurance».

The Commonwealth of Independent States Economic Development Strategy to 2020 (approved by the CIS Heads Council, November 14, 2008)

The CIS states-participants Cooperation Concept in the Field of Energy (approved by the Council of Heads of Government, November 20, 2009)

The CIS states-participants Cooperation Concept in the field of renewable energy sources use and its' realization Kick-off Plan (approved by the Decision of the CIS Governments Heads Council dated November 20, 2013).

To promote the CIS cooperation in energy efficiency and renewable energy the CIS Electric Power Council at its 37th Session on May 28, 2010 organized a Section on Energy Efficiency and Renewable Energy of the CIS EPC Working Group on the Environment.

At the 45 session of Electric Power Council of the CIS on April, 25th, 2014 the Section was reorganized in a Working group on energy efficiency and renewable energy.

2. Actual and forecasted data on installed capacity, electricity generation and energy efficiency

2.1 European Union

2.1.1 Installed capacity and electricity generation

2.1.2 Data on main parameters of efficiency of production and transmission of electricity in EU, 2015-2016

2.2 Commonwealth of Independent States

2.2.1 Installed capacity in the CIS

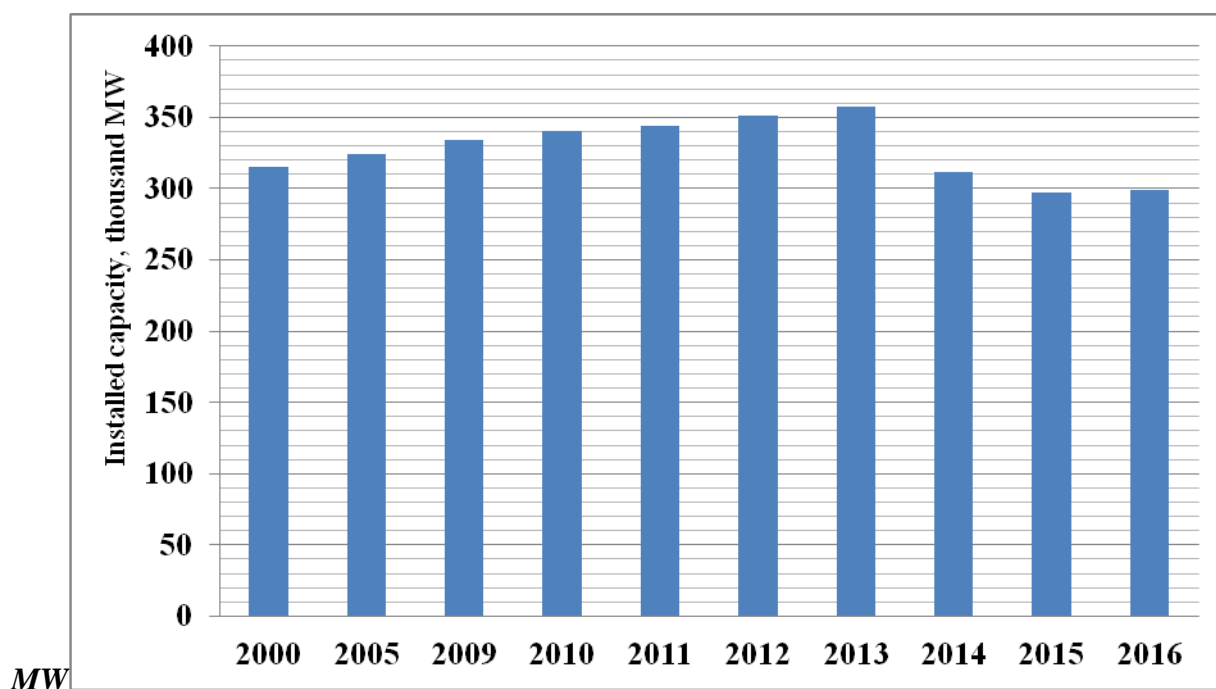
Dynamics of the total installed capacity of power plants of the CIS member states 2000-2016, MW

The CIS Member States	2000	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan	5046	5721	6427	6449	6449	6323	7153	7156	7200	7225,8
Thermal	4180	4691	5402	5402	5402	5252	6032	6032		
Hydro	866	1030	1025	1047	1047	1071	1121	1124		
The Republic of Armenia	3190	3207	3254	3522	4007	4038	4083	4123	3523,8	3540,8
Thermal	1756	1756	1756	1998	2458	2458	2484	2484	1838	1838
Hydro	1026	1043	1087	1113	1138	1169	1206	1228	1275	1292
Wind	-	2,6	3	2,6	2,6	2,6	2,6	2,6	2,85	2,85
Nuclear	408	408	408	408	408	408	408	408	408	408
The Republic of Belarus	7838	8024	8307	8426,7	8418	8923	8506,2	10144,0	9741,2	9847,7
Thermal	7830	8011	7899	7963,6	7911	8339	8478,4	9399,5	8953,2	8994,0
Hydro			9	14,77	15	32	27,8	32,9	33,5	33,9
Other	8	13	399	448,3	492	552	0	711,6	754,5	819,8
The Republic of Kazakhstan	18361	18572	19128	19440	19798	20442	20592	20844	21307,2	22055,5
Thermal	16064	16324	16864	17173	17531	17873	18002	18252	18589,6	19257,1
Hydro	2260	2248	2264	2267	2267	2569	2583	2584	2587,1	2619,3
Other							7	8	130,5	161,1
The Republic of Kyrgyzstan	3781	3742	3626	3746	3746	3746	3746	3746	3635	3592
Thermal	812	802	716	716	716	716	716	716	605*	562*
Hydro	2969	2940	2910	3030	3030	3030	3030	3030	3030*	3030*
The Republic of Moldova	2996	2988	2994	2994	2988	2994	2994	2988	2994	2994
Thermal	2834	2850	2850	2850	2850	2850	2850	2850	2850	2850
Hydro	64	64	64	64	64	64	64	64	64	64
Other	98	74	80	80	74	80	80	74	80	80
Russian Federation	204600	210500	217266	220290	223638	228737	233558	240250	243188	244146,4
Thermal	138900	141300	146418	148523	151782	154500	158474	162720	164563	164490,8
Hydro	44400	45900	47354	47453	47542	48923	49770	51817	50969	51199,5
Nuclear	21300	23300	23494	24314	24314	25314	25315	26384	27194	27977,4
RES	-	-	-	-	-	-	-	329	461	478,7
The Republic of Tajikistan	4424	4355	4354	5024	5024	5224	5246	5346,47	5346,47	5646,47

Thermal	355	318	198	318	318	318	318	418	418	718
Hydro	4069	4037	4157	4706	4706	4926	4928	4928,47	4928,47	4928,47
The Republic of Turkmenistan	2652	2931	3342	4104,2	3984	3984	4104,2	4263,2	н.д.	н.д.
Steam-turbine	2651	2510	3340	2460	3983	3983	4103	4262	н.д.	н.д.
Gas-Turbine		420		1643					н.д.	н.д.
Hydro	1	1,2	1	1,2	1	1	1,2	1,2	н.д.	н.д.
The Republic of Uzbekistan	11583	12359	12401	12474	12514	12512	12970	12500	н.д.	н.д.
Thermal	9844	10619	10619	10619	10619	10619	10619	10619	н.д.	н.д.
Hydro	1420	1420	1420	1419,7	1415	1415	1415	1415	н.д.	н.д.
Other	319	319	363	435	480	478	936	466	н.д.	н.д.
Ukraine	50929	52017	52958	53311	53311	53778	54504	н.д.	н.д.	н.д.
Thermal	34337	33372	33625	33746	33746	33890	34262	н.д.	н.д.	н.д.
Hydro	4757	4735	5414	5420	5420	5469	5473	н.д.	н.д.	н.д.
Nuclear	11835	13835	13835	13835	13835	13835	13835	н.д.	н.д.	н.д.
Other	0	75	84	309	309	582	950	н.д.	н.д.	н.д.
Total for the CIS	315400	324416	334057	339780,9	343877	350816	357456	311360,7	296935,	299048,7

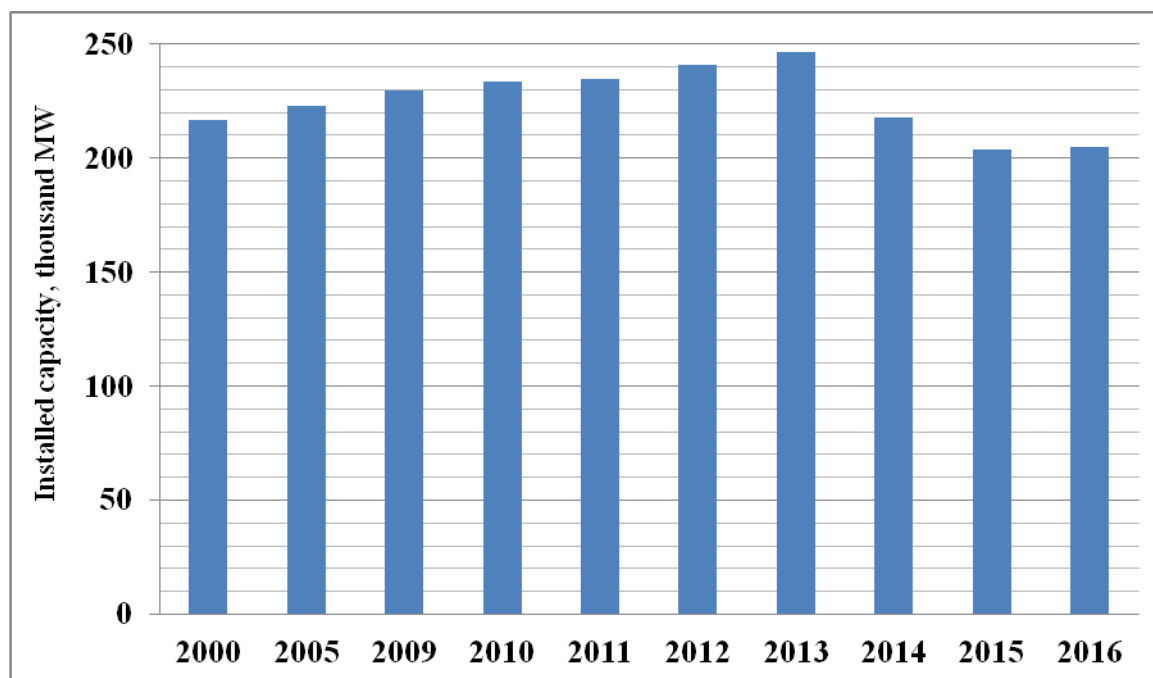
* data of JSC "Electric Power Stations"

*The dynamics of the total installed capacity
of the CIS member states power plants, thousand*



2014 - without Ukraine, 2015 and 2016 - without Turkmenistan, the Republic of Uzbekistan, Ukraine

*Dynamics of installed capacity of thermal power plants (TPP)
of the CIS member states, thousand MW*



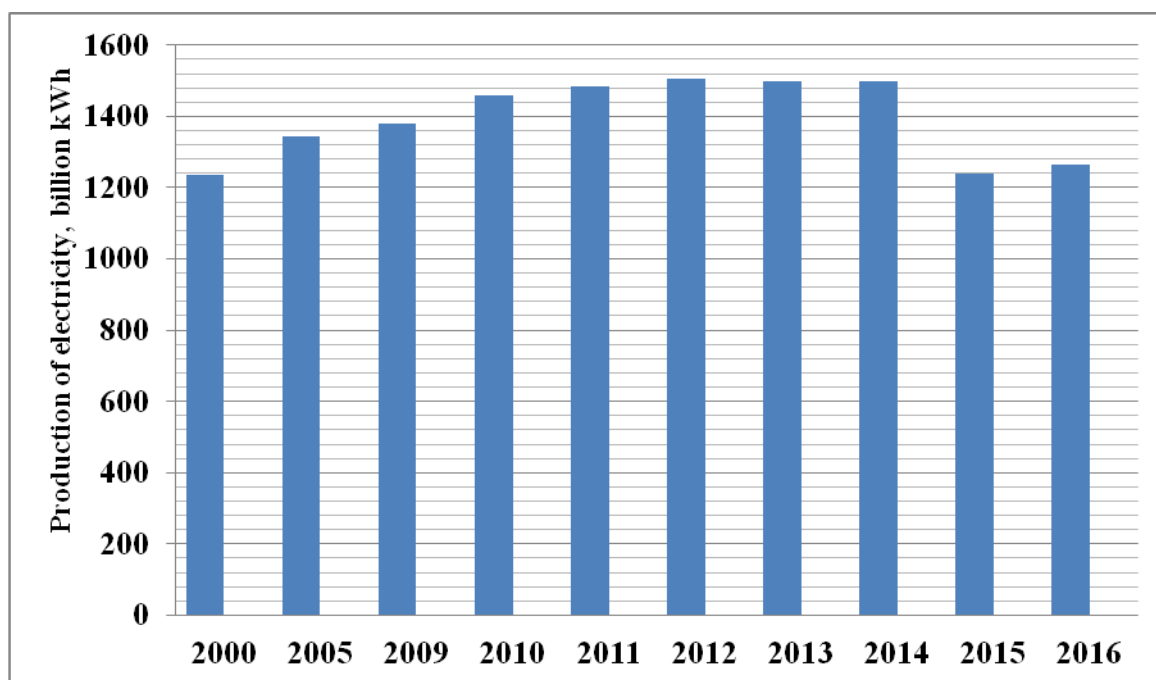
2014 - without Ukraine, 2015 and 2016 - without Turkmenistan, the Republic of Uzbekistan, Ukraine

**Production of electricity in the CIS member states 2000-2016,
billion kWh**

The CIS Member States	2000	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan	18,6	22,3	18,9	18,4	20,0	21,34	21,53	22,7	22,5	22,7
The Republic of Armenia	6	6,3	5,7	6,4	7,4	8,0	7,7	7,8	7,8	7,3
The Republic of Belarus	26	30,96	30,1	34,8	32,0	30,6	31,3	34,6	34,1	33,3
The Republic of Kazakhstan	51,6	67,6	78,8	82,3	86,2	90,2	91,9	93,9	90,7	94,1
The Republic of Kyrgyzstan	14,9	14,9	11,1	12,1	14,96	15,0	13,8	14,4	12,8*	12,8*
The Republic of Moldova		4,2	1,03	6,01	1,01	0,93	4,21	5,1	5,76	5,558
Russian Federation	877,8	935,6	981,8	1025,4	1040,5	1054,0	1045,0	1047,4	1049,9	1071,8
The Republic of Tajikistan	14,2	17,1	16,1	16,2	16,1	16,8	16,9	16,4	17	17,03
The Republic of Turkmenistan	9,9	12,34	13	16,08	18,27	19,0	18,5	20,1	н.д.	н.д.
The Republic of Uzbekistan	46,9	47,6	50	51,94	52,75	52,94	54,2	55,5	н.д.	н.д.
Ukraine	171,4	186,1	173,7	188,1	194,1	198,1	193,6	181,9	н.д.	н.д.
Total for the CIS	1237,3	1345	1380,23	1457,7	1483,29	1506,91	1498,7	1499,8	1240,56	1264,49

* data of JSC "Electric Power Stations"

**Production of electricity in the CIS member states,
billion kWh**



2015 and 2016 - without Turkmenistan, the Republic of Uzbekistan, Ukraine

2.2.2 Data on main parameters of efficiency of production and transmission of electricity, 2015-2016. (specific fuel consumption for electricity generation and transmission and distribution of electricity relative losses)

**Specific fuel consumption for electricity supply at TPPs
of the CIS member states, GW/kWh**

The CIS Member States	2000	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan	411,3	378,8	327,9	317,6	313,5	314,2	303,65	293,55	291,96	285,73
The Republic of Armenia	373	390,7	384,1	304,0	285,0	299,4	289,2	298,0	285,3	283,1
The Republic of Belarus	274,8	274,6	267,7	268,9	264,3	254,6	256,1	246,8	235,5	230,4
The Republic of Kazakhstan	385,0	362,2	350,8	352,2	355,0	360,1	361,9	378,2	382,1	382,5
The Republic of Kyrgyzstan	262,5	252,4	409,9	403,0	405,7	407,0	401,1	411,8	417,1*	424,7*
The Republic of Moldova	346,0	н.д.	н.д.	279,4	249,5	254,5	250,2	238,6	299,4	227,9
Russian Federation	341,2	334,3	333,1	334,4	330,6	334,0	328,7	325,5	322,8	319,3
The Republic of Tajikistan	326,6	269,9	341,8	440,7	405,2	388,4	360,2	441,8	219,7	364,4
The Republic of Turkmenistan	371,0	439,6	452,2	461,6	444,8	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Uzbekistan	379,5	381,0	383,6	379,9	378,9	379,88	374,15	375,56	374,89	375,81
Ukraine	374,5	380,2	388,0	383,7	380,8	373,6*	396,4	394,8	н.д.	н.д.

* data of JSC "Electric Power Stations"

Electricity transmission and distribution losses in the CIS member

States in 2005-2016, billion kWh

The CIS Member States	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan	0,93	4,1	1,7	4,4	1,8	1,9	1,9	0,9	0,4
The Republic of Armenia	0,8	0,8	0,8	0,9	0,9	0,9	0,9	0,82	0,71
The Republic of Belarus	3,6	3,5	3,8	3,4	3,4	3,3	3,2	2,91	2,87
The Republic of Kazakhstan	2,4	6,5	2,3	2,7*	2,8	2,6	2,6	2,4*	2,5*
The Republic of Kyrgyzstan	5	2,9	3	3,08	0,837	0,786	0,862	0,703	0,745
The Republic of Moldova	н.д.	0,5	0,14	0,5	0,13	0,12	0,11	0,11	0,11
Russian Federation	112,6	101,0	104,9	105,0	106,7	102,2	106,7	115,1	115,6
The Republic of Tajikistan	2,7	2,09	2,32	2,26	2,43	2,5	2,81	2,65	2,73
The Republic of Turkmenistan	1,69	2,54	3,06	3,97	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Uzbekistan	8,1	7,35	7,59	7,83	н.д.	н.д.	н.д.	н.д.	н.д.
Ukraine	24,8	20,7	21,7	21,5	21,4	20,7	20,0	н.д.	н.д.
Total for the CIS	162,6	152,0	148,3	159,3					

*data of JSC «KEGOC»

Relative electricity transmission and distribution losses in the CIS member

States in 2005-2016, %

The CIS Member States	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan	4,0	21,7	9,3	19,6	8,9	8,9	8,6	4,12	1,84
The Republic of Armenia	14,5	14,0	12,5	н.д.	12,2	12,6	12,2	10,7	9,7
The Republic of Belarus	11,08	11,6	11,19	10,06	9,91	9,88	9,35	9,01	8,92
The Republic of Kazakhstan	5,7	8,2	5,3	5,9	5,7	5,5	5,9	6,1*	6,1*
The Republic of Kyrgyzstan	33,6	26,1	24,8	н.д.	5,72	5,88	6,03	5,41	5,87
The Republic of Moldova	41,7	50,0	49,5	11,4	11,3	11,7	11,3	9,32	н.д.
Russian Federation	11,8	10,2	10,2	9,95	9,98	9,9	11,36	10,96	10,78
The Republic of Tajikistan	15,8	13,0	14,3	14,12	14,36	14,84	17,3	15,7	17,4
The Republic of Turkmenistan	13,2	19,5	20,1	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Uzbekistan	16,9	14,7	14,6	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
Ukraine	13,3	11,9	11,5	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.

*data of JSC «KEGOC»

3. Actual ecological parameters of electricity industry

3.1 European Union

3.1.1 Emissions of NO_x, SO₂, CO₂, utilisation and sale of ash and gypsum

3.1.2 Data on the application of the ISO standard and / or EMS management system (EMS) certified by EMAS

3.2 Commonwealth of Independent States

3.2.1 Emissions of pollutants into the atmosphere

Dynamics of total SO₂ emissions, tons

The CIS Member States	2000	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan	32300	11514	970	69	550,8	981,4	0	18,9	2477,9	7432,4
The Republic of Armenia	10	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Belarus	25400	16900	86700	9600	3900	10100	2000	4200	4200	6600
The Republic of Kazakhstan	1080000	1492100	1731627	1808539	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Kyrgyzstan	7500	7500	7718	6011	6163	4378	7987	12021	13975	11025
The Republic of Moldova	2600	1200	11500	10600	4,7	0,014	н.д.	700	700	н.д.
Russian Federation	1440000	979000	1088000	1118222	1054900	1130000	991545,9	964341		н.д.
The Republic of Tajikistan	н.д.	193	593	184	208	231	н.д.	204	176	189
The Republic of Turkmenistan	2873	4276	4343	5078**	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.

The Republic of Uzbekistan	149900	78410	48700	44800	49920	48206	69624	59357,6	49828,3	50 650,9
Ukraine	686200	1332806	1244000	1215900	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
Total for the CIS	3426783	3923899	4224151	4219003						

* data of JSC "Electric Power Stations"

**expert analysis

Dynamics of total NO_x emissions, tons

The CIS Member States	2000	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan	17000	19626	12458	14166	11235, 4	9139, 4	16781.5	12 335.2	11988,7	11119,3
The Republic of Armenia	3422	1100	788	395	481	498	441	513		
The Republic of Belarus	30300	33900	25700	27700	22600	22050	23600	20800	19700	20800
The Republic of Kazakhstan	161700	196900	206000	215150	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Kyrgyzstan	2300	2400	1364	1856	1902	2178	1874	2245	2218	2481
The Republic of Moldova	7100	8000	14600	12300	512,14	515,39	н.д.	19000	21000	н.д.
Russian Federation	940000	723000	835000	896695	872600	912000	824513,7	805958	788530	н.д.
The Republic of Tajikistan	104	33	64	14	13	17,3	н.д.	11	12	10
The Republic of Turkmenistan	16500	21333**	21667**	25333**	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Uzbekistan	52700	32285	31790	31090	41770	53758	57431,8	61782,1	63752,3	65 154,6
Ukraine	160600	122200	307900	344000	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
Total for the CIS	1391726	1160777	1457331	1568699						

* data of JSC "Electric Power Stations"

**expert analysis

Dynamics of gross CO₂ emissions, thousand tons

The CIS Member States	2000	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan	15700	16331,8	11378	9852	н.д.	н.д.	н.д.	10069,3	11726,2	11468,1
The Republic of Armenia	1700	1000	980*	1100	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Belarus	20900	23900	23700	25100	22800	22400	22200	22600	20700	21200
The Republic of Kazakhstan	60567	91905	76119*	103421	676008	н.д.	н.д.	114303	100201	н.д.
The Republic of Kyrgyzstan	1500	1400	1926*	2100	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Moldova	2651	3535	4392	4368	706, 8	677	н.д.	4500	4800	н.д.
Russian Federation	487800	470200	527400	553000	542100	548100	500800	50400	497000	н.д.
The Republic of Tajikistan	0,274	0,148	0,378	0,098	0,068	0,085	н.д.	0,068	0,077	0,119
The Republic of Turkmenistan	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
The Republic of Uzbekistan	29400	29400	31343*	32559	29916	29735,6	30804,4	31676,2	31432,6	30 272,7
Ukraine	64400	н.д.	88556	94404	н.д.	н.д.	н.д.	н.д.	н.д.	н.д.
Total for the CIS	684618		765795	825904						

*expert analysis

4. Actual and forecasted data on development of renewable energy

4.1 European Union

4.1.1 Use of renewable energy sources

4.1.2 Forecast capacity and plans for the use of renewable energy sources in the EU until 2020

4.2 Commonwealth of Independent States

4.2.1 Use of renewable energy in the CIS member states in 2013-2014

The Commonwealth of Independent States has a significant resource potential. It occupies 16.4% of the world territory, with a population of approximately 4.4% of the world one. The CIS accounts for about 20% of the world's oil reserves, 40% of natural gas, 25% of coal, and 10% of electricity production.

At the same time, the potential contribution of major renewable energy sources in the energy systems of the CIS countries is estimated as follows:

- biomass, biofuel - 20 Mtoe;
- hydroelectric power - 10 Mtoe;
- geothermal energy - 12 Mtoe;
- wind power - 15 Mtoe;
- solar energy - 6 Mtoe.

The main drivers of the renewable energy market in the CIS countries should be considered:

- reducing the cost of renewable energy technologies;
- efficiency of renewable energy technologies;
- reduction of greenhouse gas emissions

4.2.2 Forecast capacity and plans for the use of renewable energy sources in the CIS member states until 2020

In the Russian Federation in 2014 a special program ("Road Map") was elaborated for the development of renewable energy sources until 2035. REA RF, INEI RAS and the Institute of Power Engineering of the Higher School of Economics were involved in the work. On the instruction of the Ministry of Energy of Russia,.

It should be noted that the official adoption of this document, as well as the Energy Strategy of Russia for the period until 2035, has been postponed.

The work has been done to assess the economic potential of renewable energy use, to identify competitive development trends and renewable energy projects, to assess the multiplicative economic effect from the development of renewable energy sources.

The obtained results can be used in carrying out similar studies for interested CIS member states with the purpose of assessing the overall economic potential of RES in the CIS, as well as the multiplicative effect of RES development taking into account the specifics of the CIS member states.

System elements for the implementation of the supporting mechanism for investment into RES projects are the targets set by the Government of the Russian Federation (Decree No. 1-r, January 8, 2009), for commissioning capacities of generating facilities based on RES (investment projects of RES) until 2024.

Installed capacity of renewable energy in the CIS member states, MW

CIS member states	2005	2009	2010	2011	2012	2013	2014	2015	2016
The Republic of Azerbaijan									
Small hydropower plants			4,5		5,5	10,0	12,9	12,891	14,7
Solar power								20	20
Republic of Armenia									
Small hydropower plants	55,7	205,7	161,4		237	260	282	311	328
Wind power	2,6	2,6	2,6		2,6	2,6	2,6	2,85	2,85
Bioenergy	0,8	0,8	0,8		-	-	-	-	-
Republic of Belarus	13,9	10,6	16,1		35,7	58	93,1	120,5	186,8
Small hydropower plants	13,0	9,4	14,8	14,8	31,8	32,2	32,9	33,5	33,9
Wind power	0,9	1,2	1,3	3,1	3,9	7,3	26,4	48,1	71,0
The Republic of Kazakhstan	76	91,8	94,9	94,9	96,4	120,85	177,52*	251,1	295,78
Small hydropower plants	76	91,8	94,4	94,9	96,4		119,27	122,32	139,9
Wind power							52,81	71,75	98,2
Solar power							5,04	57,07	57,3
Republic of Kyrgyzstan									
The Republic of Moldova			16		2,61	20,05	20,94	21,45	23,4
Small hydropower plants			16		16	16	16	16	16
Wind power						1,1	1,1	1,1	2,3
Solar power						0,1	0,99	1,5	2,26
Bioenergy					0,09	2,8	2,8	2,8	2,8
Russian Federation**							329	461	478,7
Small hydropower plants			7		9,8	9,8			
Wind power					7,3	7,3			
Solar power									
Geothermal power			81,2		76,1	75,6			
Bioenergy									
Tidal Energy		1,1	1,7						
The Republic of Tajikistan	30,1	31,5	32,7	33,5	36,6	11,44*	11,44*	11,44*	11,44*
The Republic of Turkmenistan									
The Republic of Uzbekistan									
Ukraine	135	172	172		645,4				
Small hydropower plants	76	88	88		73,8				
Wind power	59	84	84		193,8	372	509		
Solar power					371,6	563	582		
Bioenergy					6,2	35	54		

* 11.44 MW installed capacity is shown by a small hydroelectric power stations, which are part of the "Barki Tochik».

** Main technical and economic performance indicators - power systems - Collection "Electric Power Industry of the Russian Federation 2006-2016."