

Development of the renewable energy sector in the Russian Federation and in CIS: Prospects for interregional cooperation

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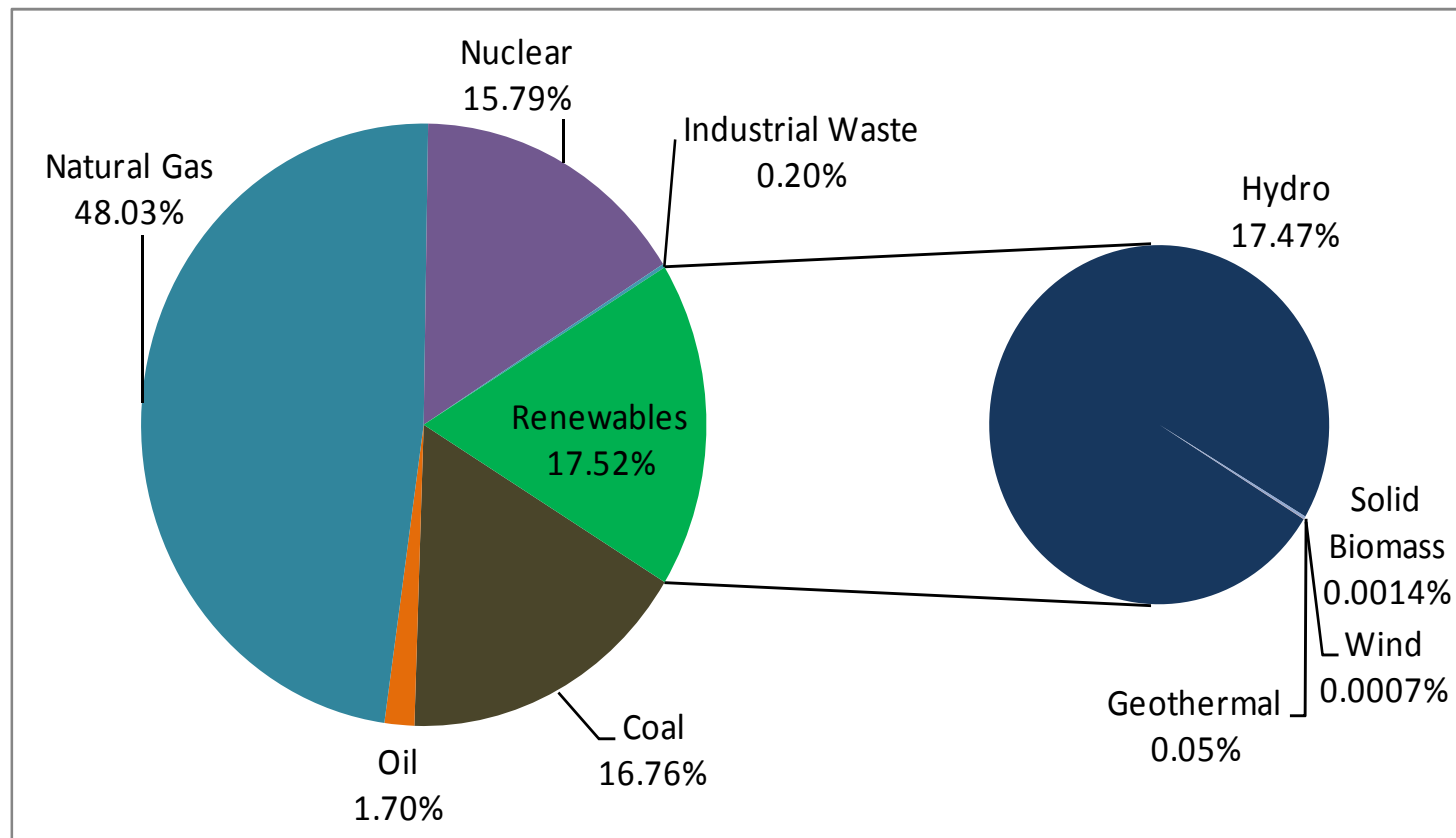
Geneva, 4 June 2009

Overview

- Renewable energy (RE) market status in Russia and selected CIS countries
- RE Potentials
- RE Policies
- IEA Technology Network
- Technology collaboration with Russia

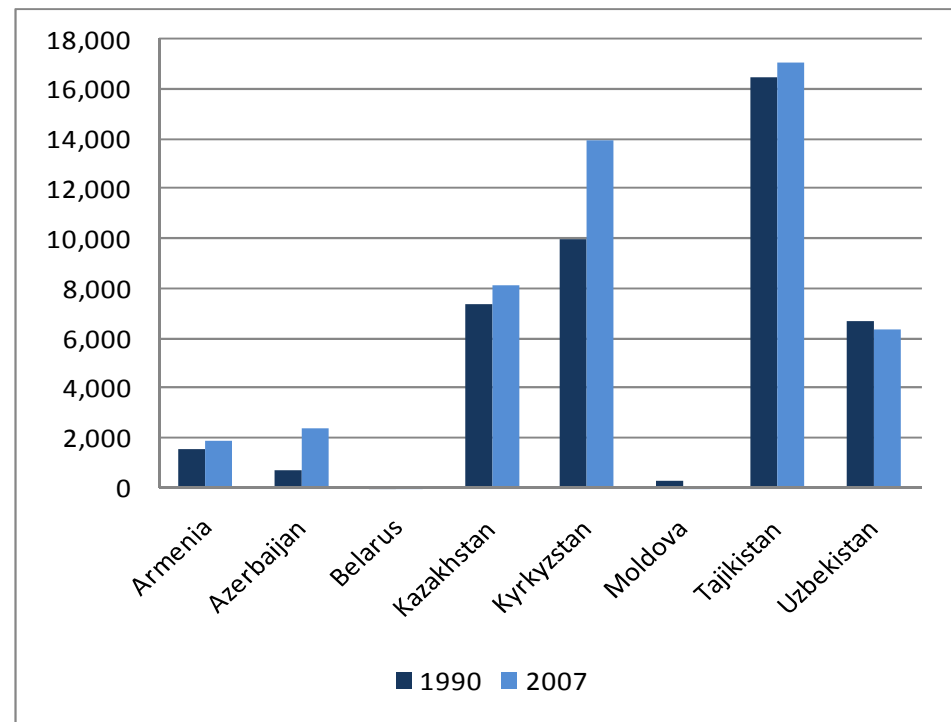
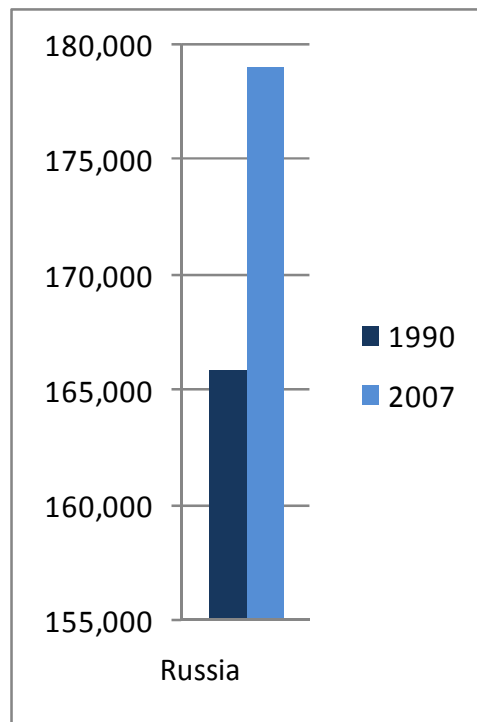
Renewables in Electricity generation in Russia (2007)

total generation: 1,013 TWh



Evolution of hydro generation in Russia and CIS

(GWh)



RE potentials in Russia (TWh)

Energy source	Technical potential	Economic potential	Realizable potential 2020
<i>Source:</i>	<i>P. Bezrukikh</i>		<i>IEA - Deploying Renewables 2008</i>
Wind	18040.5	89.6	25.7
Small hydro	1025.8	569.9	387.8 (total hydro)
Solar*	78927	24.4	27.4
Biomass**	1050.2	561.7	420.1
Geothermal*	96625.5	928.1	65.8
Total	195669	2173.7	926.8

*Includes electricity and heat

**Includes electricity, CHP and domestic biofuels

- The IEA realizable potential assumes:
 - Incentive schemes in place
 - Tackling non-economic barriers
 - Lead time for deployment taking 2005 starting point into account

RE potentials in CIS

National Information

Kazakhstan:

- Large and small hydro; 300,000 tons of biodiesel/year, 300MW of wind by 2015

Kyrgyzstan:

- Solar potential in the south of the country, Biogas, Small hydro potential yet unexploited

Uzbekistan:

- Large solar potential (could exceed proven hydrocarbon reserves), 20,000MW of hydro potential, Low temperature geothermal

Turkmenistan:

- Large unexploited wind and hydro potentials

Tajikistan:

- Solar could satisfy 15-20% of national energy demand, Only 5% of hydro potential is exploited

Recent RE policy developments in Russia

- January 8, 2009, executive directive of Prime minister to increase energy efficiency of power sector on basis of RES
- Targets for share of renewables in power generation (large hydro excluded):
 - 1.5% in 2010
 - 2.5% in 2015
 - 4.5% in 2020
- Regional governments should make provisions in their development programs for measures that foster implementation of government policy
- Government meeting on energy efficiency and renewables on June 2, 2009

Renewables policies in CIS

Belarus:

- Feed-in tariffs – based on German feed-in law

Kazakhstan:

- draft law “On Support for the Use of Renewable Energy Sources”
- draft law on “State regulation of production and sales of bio-fuels”

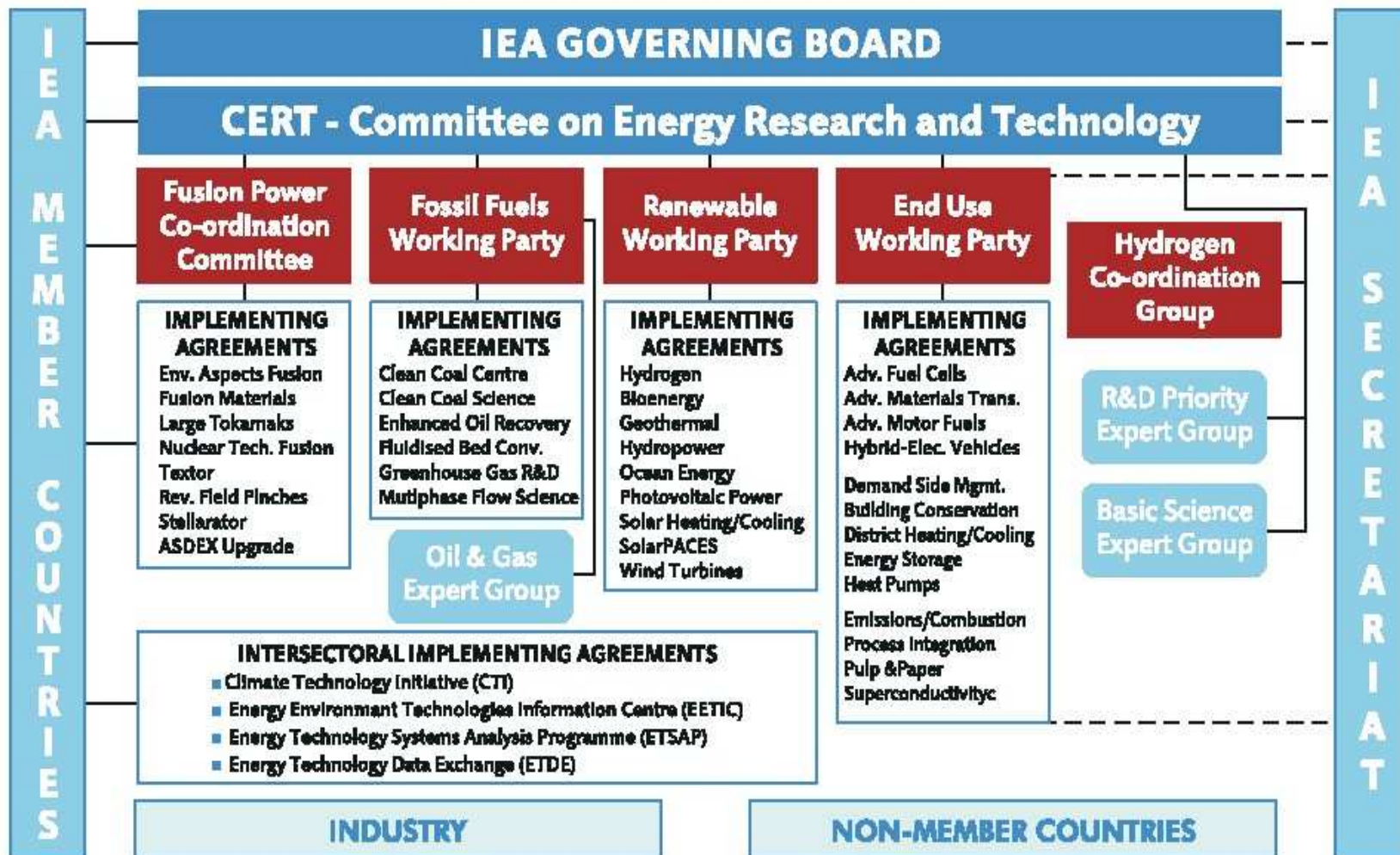
Kyrgyzstan:

- National Energy Programme and Strategy for the Fuel and Energy Complex Development

Uzbekistan:

- Program on Development and Reconstruction of Generating Facilities in Energy Sector

IEA Energy Technology Network



Energy Technology Collaboration with Russia

- Russia is a Contracting Party to five Implementing Agreements (IAs):
 - Enhanced Oil Recovery IA
 - Environmental, Safety and Economic Aspects of Fusion Power IA
 - Fusion Materials IA
 - Nuclear Technology of Fusion Reactors IA
 - Stellarator Concept IA
- SUEK is a Sponsor to one Implementing Agreement:
 - Clean Coal Centre

No participation in Renewable Energy IAs yet

FASI-IEA Russia NEET workshop on energy technology collaboration

- Organized by the Federal Agency for Science and Innovation (FASI) and the IEA, Moscow, 30 September – 1 October 2008
- Participation of
 - 3 Working Parties (Fossil Fuels, Renewable Energy, End-Use)
 - 17 Implementing Agreements from the IEA technology network
 - → discussions about possible membership are currently taking place

-Fossil Fuels:

- Clean Coal Centre IA
- Fluidised Bed Conversion IA
- Greenhouse Gas and R&D IA

-Renewable Energy Technologies:

- Bioenergy IA
- Geothermal IA
- Hydrogen IA
- Ocean Energy Systems IA
- Solar PACES IA
- Wind Energy Systems IA

-End-Use Technologies:

- Advanced Fuel Cells IA
- Advanced Motor Fuels IA
- Demand Side Management IA
- Energy Storage IA
- High Temperature Superconductivity IA
- Hybrid and Electric Vehicles IA

-Cross Cutting Issues:

- ETSAP, Energy Technology Modelling IA
- ETDE, Energy Technology Data Exchange IA

Russia expressed their interest to join
Geothermal, Wind, Ocean and Hydropower IAs.

Contacts

- IEA website
 - www.iea.org
 - Search by Topic: Renewables
- IEA policy database
 - <http://renewables.iea.org>
- Renewable Energy Working Party
 - Chairman, Roberto Vigotti
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- Renewable Energy Unit at IEA Secretariat
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- Networks on Expertise and Energy Technology (NEET)
 - www.iea.org/neet