



WWF® *for a living planet*®

Potential and Problems of Improvement of Energy Efficiency in Russia

16 october 2009

Helsinki

Inna Gritsevich, Ph.D., Main Coordinator
Energy Efficiency Project

WWF Russia





GDP Energy intensity in Russia is 2 times greater compared to world average

- Technical efficiency of majority of boilers is lower by 30% compared to best world numbers
- Only 15% of cement is produced by dry technology
- District heating is especially inefficient with high losses of hot water transported
- This list could be continued...





Some reasons for higher energy intensity of Russian economy

- *Geographical position as a northern country with cold climate and long heating season – 5-8 months*
- *Huge territory with low density of population unevenly distributed*
- *Domination of raw material and heavy industries – oil and NG production, refining and transportation, ferrous and non-ferrous metallurgy, etc.*

But no one of these factors doesn't justify current energy intensity of Russian economy





Recent tendencies of economic growth and energy efficiency improvement

- In 1999-2007 GDP grew by 5-7% annually
- Energy demand grew by 1-1,5% annually
- As a result GDP energy intensity decreased by 25% in this time period
- Energy related GHG emissions increased in 1998-2008 by 12% only while GDP nearly doubled

It was a temporary effect of specific short term factors





Reasons of recently observed tendencies

- Structural changes in the economy due to higher growth of services and less energy intensive industries
- Increase of capacity utilisation rate in industry
- New production lines use imported equipment which is more efficient
- Dramatic growth of oil and other raw material prices at world markets resulted in decrease of energy intensity of GDP without improvement in energy consumption per unit production in natural units (t)

This improvement was gained without any governmental policies to stimulate activities in this field

Today these reasons don't work, though they could play some role in the next 2-3 years, but not in a long term





Long-term sustainable economic development requires active governmental policy and measures

- Too high dependence on fuel and raw materials exports makes economy too vulnerable in unstable world economy
- Too high level of depreciation of equipment and infrastructure endangers national security
- Low energy efficiency could result in energy and fuel deficit and hamper economic growth





Energy efficiency potential in Russia

Based on the recent study of World Bank and IFC “**Energy Efficiency in Russia: Untapped Reserves**” (2008)

- Total technological potential is about 300 mtoe or 42-45 % of total energy consumption in 2005, in particular annual savings could gain:
 - 240 m³ of Russia’s largest fuel source, natural gas,
 - 340 billion kWh of electricity,
 - 89 million tons of coal, and
 - 43 million tons of crude oil and refined petroleum products.
- Heat consumption in residential and public sectors could be reduced by 52%
- Natural gas saving potential is about 50% and greater than it exports





Aggregated map of Russia's technical energy efficiency potential, mtoe

Energy supply and consumption sectors	Coal	Crude oil	Petroleum products	Gas	Other solid fuels	Electricity	Heat	Total	2005 energy consumption
Total	60.12	9.40	27.38	185.75	5.95			288.59	
Total primary energy supply	60.12	9.40	27.38	173.65	5.95			276.49	653,62
Electricity generation	25.35		1.54	61.74	0.39			89.02	186,75
Heat generation	24.16	0.43	7.62	73.78	3.48	1.90		111.36	194,60
Fuel production, transformation, transmission and distribution.	1.58	1.87	0.10	4.85	0.16	7.77	23.65	39.97	85,21
Total final energy consumption	9.03	0.00	18.01	29.82	1.65	18.63	60.39	137.55	422,38
Agriculture and forestry	0.02		1.53	0.08	0.04	0.73	0.50	2.90	6,21
Fishing									0,04
Mining		0.00	0.14			0.37	0.60	1.12	7,19
Manufacturing	8.41		1.19	9.86	1.40	7.72	12.90	41.49	109,54
Construction	0.00		0.20	0.01	0.01	0.25	0.04	0.50	1,70
Transport	0.02	0.00	14.74	6.59	0.00	0.79	0.07	22.21	94,40
Municipal utilities	0.00		0.01	0.00	0.00	0.36	0.34	0.72	3,61
Services sector	0.01		0.02	3.12	0.01	4.60	7.44	15.20	36,31
Residential	0.57		0.18	10.16	0.19	3.82	38.50	53.42	108,24





Governmental targets and efforts to restart efficient energy saving policies

National target on improvement of GDP energy efficiency as 40% in 2020 compared to 2007 was declared in 2008 by the President

- **Federal Law on energy saving and improvement of energy efficiency will pass through second hearings in Duma and is expected to be adopted by the end of this year**
- **Long list of drafts for by-laws annexed to this Law is developed as well**
- **Governmental program of improvement of energy efficiency is under development by the moment. It should result in annual 387 mtons of CO2-equ. of GHG emissions reduction by 2020**
- **Plans for massive replacement of incandescent lamps with CLLs claimed by 2014**
- **On other hand in Energy Strategy of RF until 2030 there is no separate section on energy efficiency which placed on the last position in the list strategic initiatives for development of FEC**





Thanks for attention

Our contacts:

WWF Russia

Phone: +7 495 727 09 39

Fax: +7 495 727 09 38

russia@wwf.ru

<http://www.wwf.ru/>

