



UNDP Россия

“Energy efficient buildings: UNDP/GEF market transformation initiatives in Russia”

«Энергоэффективные здания: проекты ПРООН/ГЭФ в России по продвижению энергоэффективных технологий и оборудования»

Natalia Olofinskaya
UNDP-Russia
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United Nations Development Programme (UNDP)

IN RUSSIA SINCE 1997

PORTFOLIO OF NATIONAL PROJECTS

CLIMATE CHANGE AND ENERGY EFFICIENCY:

EE & LOW CARBON DEVELOPMENT CC ADAPTATION

CARBON FINANCE KNOWLEDGE MANAGEMENT

PROTECTION OF CARBON STOCKS & LULUCF

PUBLIC PRIVATE PARTNERSHIPS ODA

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TRUST FUND – GRANTS FOR PROJECTS DELIVERING GLOBAL ENVIRONMENTAL BENEFITS

FINANCIAL INSTRUMENT FOR GLOBAL ENVIRONMENTAL CONVENTIONS:

UN FRAMEWORK CONVENTION ON CLIMATE CHANGE

WWW.THEGEF.ORG

gef GLOBAL ENVIRONMENT FACILITY
INVESTING IN OUR PLANET

GEF Umbrella Programme «Energy efficiency in Russia»

- Development 2008-2009
- Implementation 2010-2014
- ГЭФ financing $ 60 mln
- Co-financing $ 400 mln
- GEF Implementing Agency EBRD, UNDP, UNIDO
- National partners and implementing agencies Ministry of natural resources and environment, Ministry of Energy, Ministry of economic development, Ministry of education and science, Ministry of industry, regional governments

GEF Umbrella Programme «Energy efficiency in Russia»

Strategy:

- Removal of barriers to EE in various sectors of economy
- Mainstreaming energy efficiency into government investment frameworks for buildings sector
- Capacity building

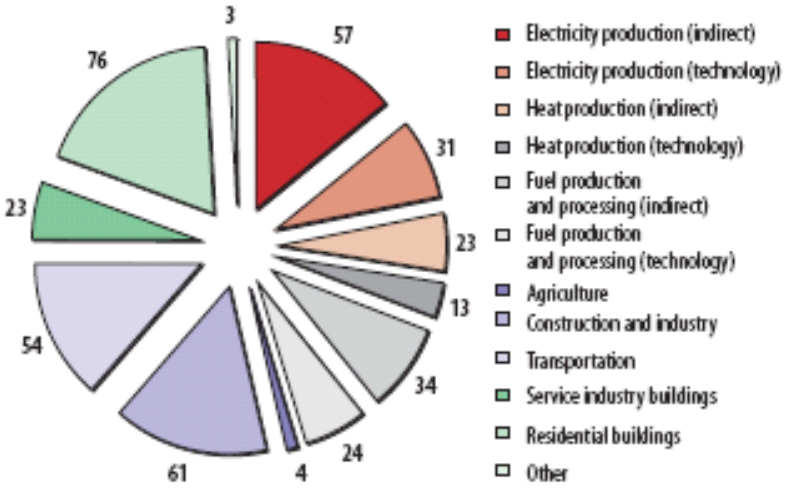
Goal – reduce greenhouse gas emissions from energy consumption in the Russian economy and facilitate market transformation towards more efficient buildings, equipment and appliances






Russia's energy efficiency potential and targets

Breakdown of Russia's energy efficiency potential (million tonnes of fuel equivalent)



Source: CENEf estimation for the World Bank

Targets for reducing fuel and electricity intensity of GDP in the Concept for Long-term Social and Economic Development of the Russian Federation up to 2020, and estimates up to 2030 (%)

	Scenario	2007	2012	2020	Reduction in 2007-2020	2030	Reduction in 2007-2030
Energy intensity of GDP	Inertia	100.0	83.7	70.6	29.4	59.2	40.8
	Energy and raw materials	100.0	83.1	67.0	33.0	53.6	46.4
	Innovation	100.0	82.4	59.6	40.4	42.1	57.9
Electrical energy intensity of GDP	Inertia	100.0	88.1	81.4	18.6	77.1	22.9
	Energy and raw materials	100.0	88.7	80.1	19.9	70.7	29.3
	Innovation	100.0	87.9	72.5	27.5	56.5	43.5

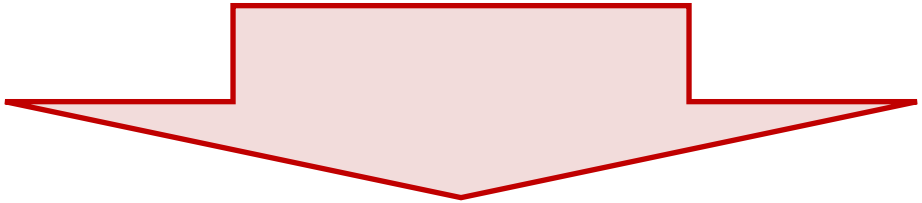
Sources: Presidential Decree No.889 (June 4, 2008), 'On measures to improve energy and environmental efficiency of Russia's economy', and the Memorandum, ' On scenarios for long-term social and economic development of the Russian Federation', (Ministry of Economic Development, July 2008).

Russia's energy efficiency policy:

The target of 40% reduction in GDP energy intensity in 2007-2020 гг. (2008)

New Federal Law On energy saving and increased energy efficiency, November 2009

Federal Target Programme on Energy efficiency



REGIONAL GOVERNMENTS

BUSINESSES

PUBLIC PRIVATE PARTNERSHIPS

UNDP/GEF projects on building energy efficiency

Building energy efficiency in the North West Russia

Regional Administrations of the pilot regions
Arkhangelsk, Vologda, Pskov regions
$ 5.84 mln GEF + $ 23.25 mln co-finance
2011 + 5 years

Standards and labels to promote energy efficiency in Russia

Ministry of education and science of Russia
$ 7.81 mln GEF + $ 57.37 mln co-finance
2010 + 5 years

Market transformation for efficient lighting

Ministry of energy of Russia
Moscow city, Nizhny Novgorod oblast
$ 7.02 mln GEF + $ 65.73 mln co-finance
2010 + 5 years

Greening 2014 Sochi Olympics: A Strategy and Action Plan for the Greening Legacy

Ministry of natural resources and environment of Russia

Energy efficient lighting

Transforming the Russian lighting market towards more energy efficient lighting technologies and phasing-out inefficient lighting products:

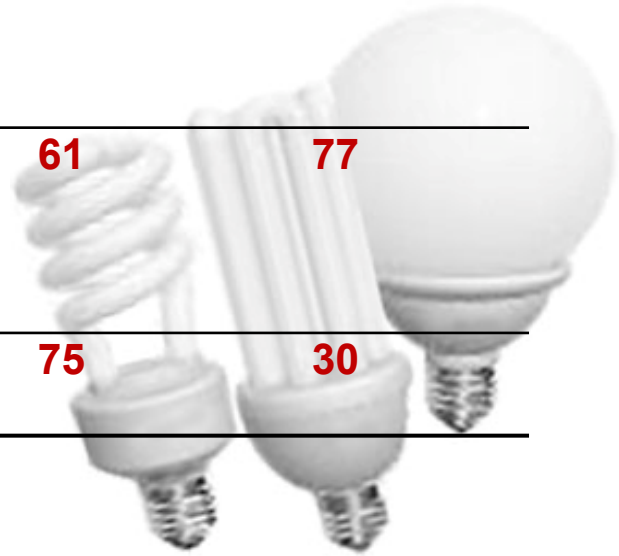
- Improved efficient lighting standards and policy frameworks
- Supply chain for energy efficient lighting
- Energy efficient lighting in Moscow residential and public buildings
- Energy-efficient street lighting in Nizhny Novgorod region

Expected energy saving by the end of the 5-year project:
approx. 4 TWh/year (1.85 Mtn CO2 /y) including
- direct savings due to EEL projects in Moscow and Nnovgorod 69 GWh/y
- indirect savings from market transformation 3.5-4.0 TWh/y

Within ten years after project completion, 55% of the technical energy savings potential will have been captured bringing savings of 31 TWh/yr (15.5 Mt CO2/yr)

Efficient lighting: energy saving potential in key sectors

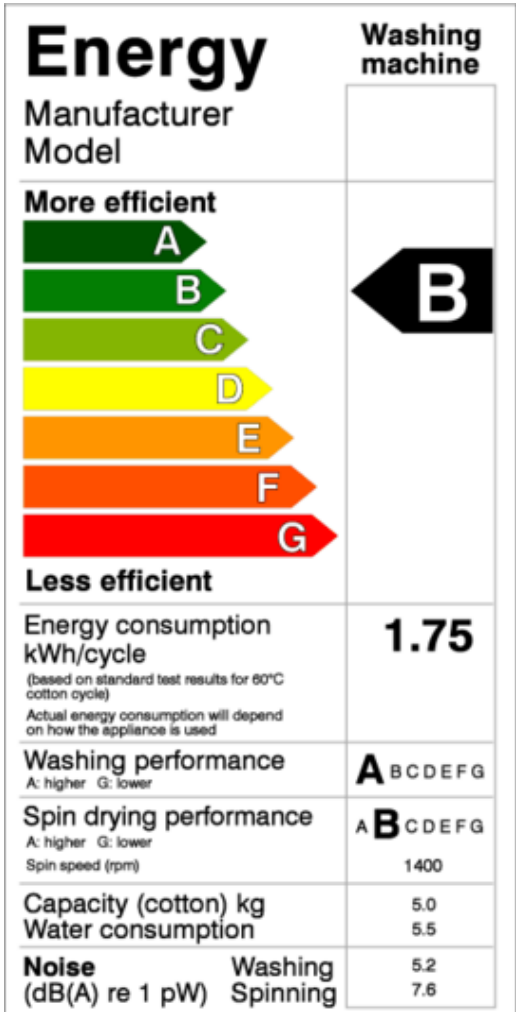
Sector	Proposed upgrade	Energy Savings (%)	GHG reduction (kg per lamp per year)
Street lighting	From: mercury High Intensity Discharge lamp with electromagnetic ballast To: Ceramic metal Halide lamps with electronic gear	**57**	**109**
Commercial	From: Low power halogen reflector lamps To: low power ceramic metal halide reflector lamps with electronic gear	**80**	**115**
Public & industrial buildings	From: T8 fluorescent lamps with electromagnetic ballast To: T5 fluorescent lamps with electronic gear	**61**	**77**
Residential	From: Incandescent lamps To: CFLs	**75**	**30**



EE Standards and Labels

Market transformation towards improved EE in residential, commercial and public sector through the implementation of energy efficiency standards and labeling for key household appliances and technical building equipment

- National legal and regulatory framework and institutional capacities for introduction and wide-spread application of EE S&L
- National S&L schemes for selected products, verification and enforcement capacity
- Support to local manufacturers and other supply-chain stakeholders
- Awareness and access to non-partial information for residential and commercial clients



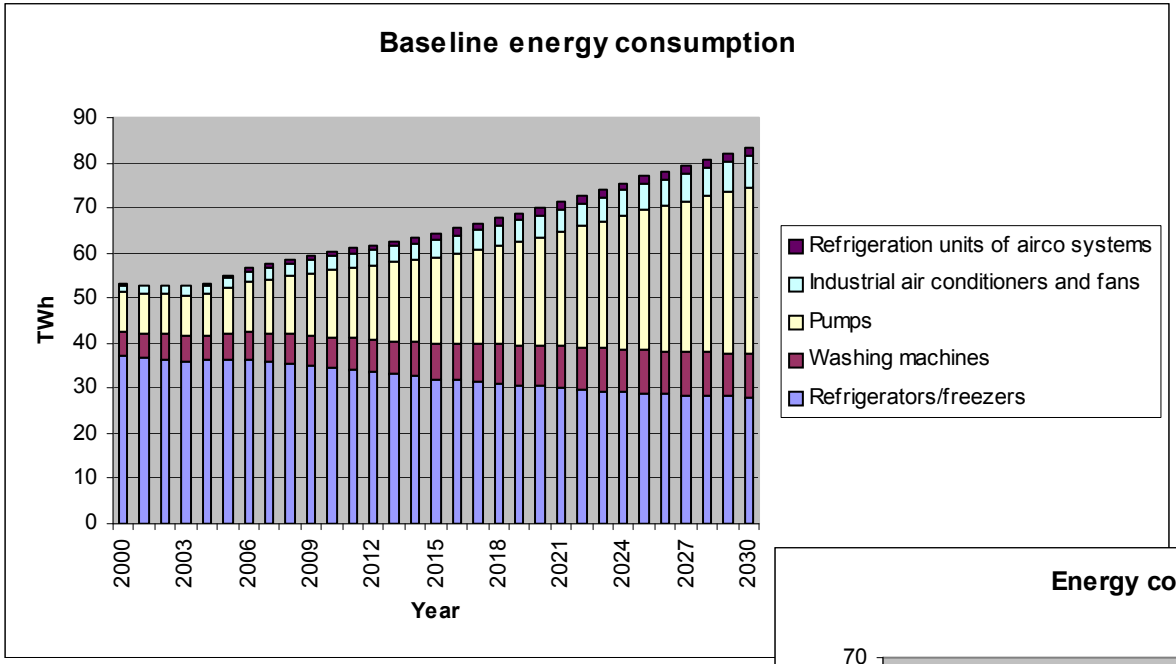
EE Standards and Labels: equipment selected for the pilot phase

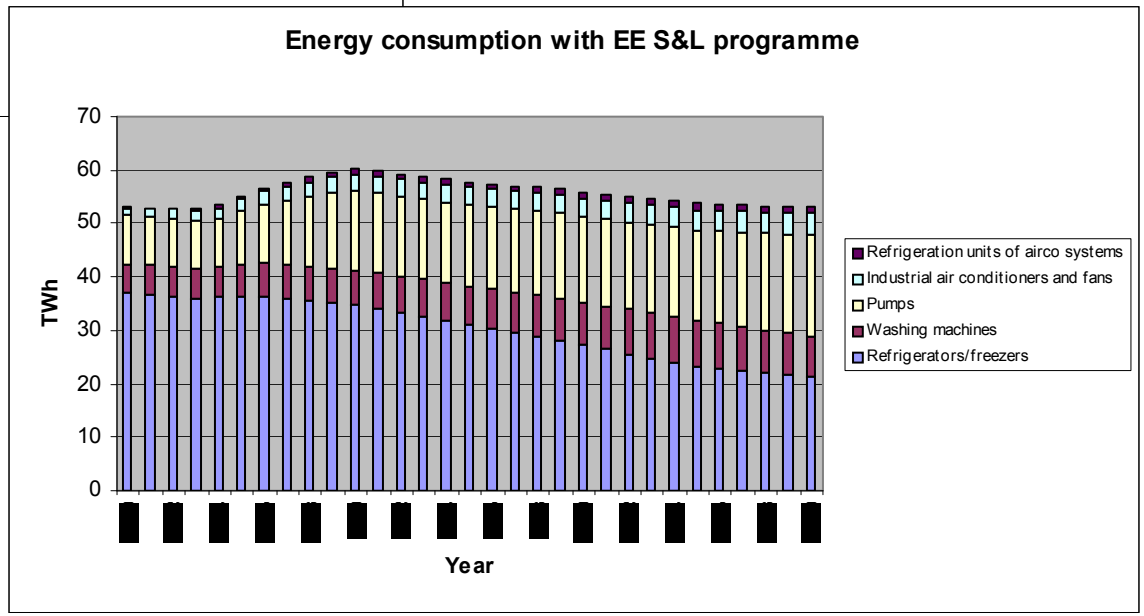
Type of equipment	Annual Energy Consumption, mln. kW*h/year
Industrial energy-consuming equipment used in buildings	
Water pumps	12,800
Industrial air-conditioners and fans	2,900
Chillers for central air-conditioning systems	850
Household appliance	
Refrigerators and freezers	31,600
Washing machines	7,300

Energy consumption and energy saving potential of household electric appliances and building engineering equipment

Types of equipment	Energy consumption, mln. kW*h/y	Import, %	Average level of energy efficiency according to EU scale	Energy saving potential, mln. kW*h/y	CO2 emissions reduction potential, mln.t/year
Refrigerators, freezers	31600	36	C-D	2528-3160	1690-2117
Washing machines	7300	68	D-E	365-400	244,5-268
Water pumps	12800	50-55	C-D	3000-4000	2000-3000
Industrial air-conditioning and ventilation units	2900	60-65	C-D	600-800	400-600
Refrigeration machines in central air-con systems	850	85-90	D-E	250-300	180-200

EE Standards and Labels





Expanded market demand for energy efficient equipment and appliances

Reduction in electricity consumption:

by 6.6 TWh in 2015

by 14.1 TWh in 2020

by 30.1 TWh in 2030

Building energy efficiency in the North West Russia

Local solutions and capacity building for improved energy efficiency in building construction and maintenance: Pskov, Vologda, Arkhangelsk regions

- Regional/local regulatory and institutional framework for improved energy efficiency: improved enforcement, building codes, investment planning
- Capacity building and know-how
- Demonstration of local energy efficient solutions and management models :

Pilot 1: Model residential construction site in Vologda oblast – integrated EE planning and management

Pilot 2: Energy efficiency certification of buildings (Arkhangelsk)

Pilot 3: Local EE information and management system for construction and building maintenance

Solution Exchange platform facilitated by UND Energy Efficiency Community of Practice

http://solex-un.ru/energo

Thank you!

125009, Москва,
Леонтьевский пер., д. 9
+7(495)787-2100
+7(495)787-2101
office@undp.ru

9, Leontievsky Lane,
125009, Moscow
Tel.: +7(495)787-2100
Fax: +7(495)787-2101
office@undp.ru

Программа по экологии и энергетике:
+7 (495) 787-2139
nataly.olofinskaya@undp.org

Energy and environment programme:
+7 (495) 787-2139
nataly.olofinskaya@undp.org