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# ***Energy Efficiency and RES strategies in Russia***

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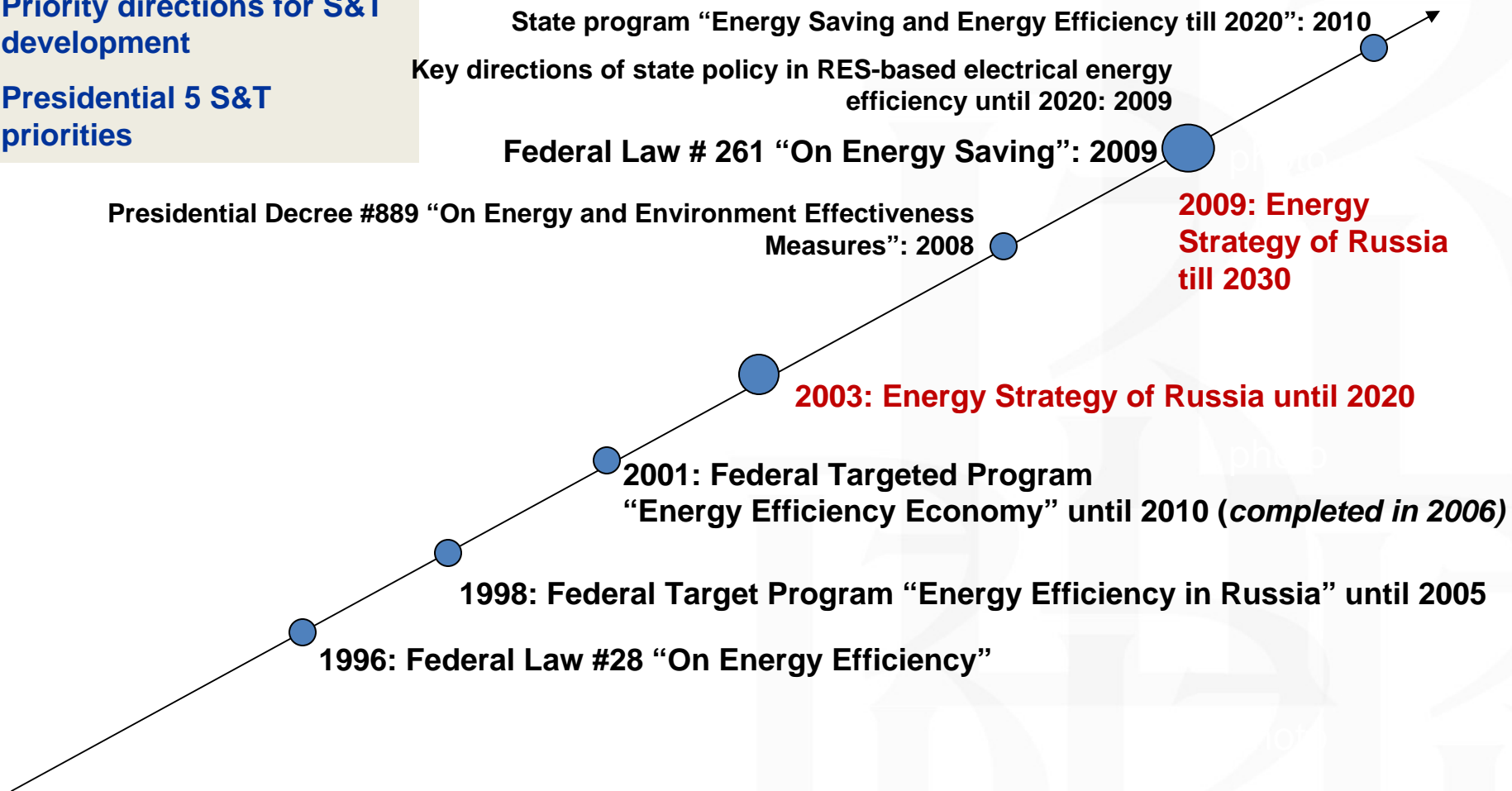
**Moscow, Russia**

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# Main documents

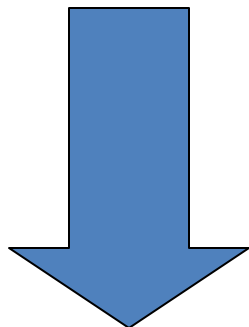
Priority directions for S&T development

Presidential 5 S&T priorities



# Energy intensity

As of 2010 Russia's energy intensity is three times higher than in Canada, higher than that of all BRICS countries



President set the energy efficiency goal to reduce energy intensity (energy use per unit of GDP) by 40% by 2020 compared to 2007 levels

# Energy efficiency key players

**Presidential commission on modernization  
and technological development of the  
Russian economy**

**Energy supply companies**

**Decision-makers:**

**Federal ministries:  
Ministry of Energy;  
Ministry for Economic  
Development; Ministry for  
Regional Development**

**Users: enterprises,  
population**

# Energy Strategy till 2030

- Innovative development path for energy sector (*i.e. lowering GDP energy intensity two fold*)
- Overcoming threats related to volatility of energy prices at international markets (*i.e. increase the effectiveness of oil extraction, raise productivity in coal industry*)
- Energy and environmental security (*i.e. limiting greenhouse gas emissions by 2030 at the 100% level of 1990*)

# Effect for the economy

Full energy efficiency potential would cost a total of **\$320 bln**; result in annual costs savings to investors and end users of about **\$80 bln**, pay back in four years. Benefits to the total economy: **\$120-150 bln** per annum of energy cost savings and additional earnings from gas exports

*By realizing its energy efficiency potential Russia can save:*

- 240 billion cubic meters of natural gas
- 340 billion kWh of electricity
- 89 million tons of coal
- 43 million tons of crude oil and equivalents in the form of refined petroleum products



# IEA energy saving recommendations

Policy recommendations to G8 summits (2006-2008) cover 25 fields of action across seven priority areas: cross-sectoral activity, buildings, appliances, lighting, transport, industry and power utilities. The proposed actions could save around 8.2 GtCO<sub>2</sub>/yr by 2030

- ➔ Russia was lagging behind in a number of priority areas, which was mostly compensated by the 2009 law
- ➔ Of G8 countries Russia has had the largest improvement in energy intensity during the 1990-2007 period
- ➔ It is estimated that consumption per unit of output can be reduced an additional 40-50% from 2000 levels
- ➔ Russia needs to urgently improve its collection of energy efficiency indicator related data

# Case Studies: Ural Federal University-1

- The institution to implement and coordinate EE measures, programs and activities on energy conservation and EE in high schools of the Ural Federal District aimed at reducing water and energy consumption (MES Russia)
- Many years leadership in energy audit and energy saving
- UrFU Structure: an experimental-industrial complex (i.e. for alcohol-gasoline blends), Council on energy conservation and efficiency, first Department of Energy saving in Russia (1999)
- Experimental biogas plant purchase through green procurement; in 2005 UrFU established and put into operation a steam back pressure turbine (turbine generator) power 0.75 MW (payback est. 2,5 years)



# Case Studies: Ural Federal University-2

- Plan of the energy audits of UrFU in 2012 (data collection through integrated monitoring systems with planned phased integration of the system), Action plan involving teachers, researchers, students; National student competition, targeted own energy consumption reduction by 3% annually
- Applied studies of RES and demonstration (energy efficient home)
- International links with Germany, the Czech Republic, Great Britain, France, the United States, cluster of energy efficient technologies Skolkovo Foundation
- Difficulties: lack of awareness among company CEOs; lack of own resources to conduct large-scale events, development of innovative products

# Case Studies: Nizhny Novgorod State Technical University

- EE Action plan and research initiated by University Management and Nizhny Novgorod investment center on energy efficiency
- Areas of expertise: EE methodical development of energy conservation systems campus; development of energy conservation performance indicators, creation and application of new technologies and methods of energy conservation; energy efficiency in buildings; staff training aimed at energy efficient behavior
- Structure includes: Nizhny Novgorod investment center on energy efficiency of NSTU and Department of electric power
- Committed to energy consumption reduction by not less than 3% annually (261 law)
- Develops regional energy saving strategies (decision of Ministry of Education and Science)



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# Thank you for your attention!

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