



# **Energy Efficiency in Russia: Scope for EU-Russia Cooperation**

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# Overview

- Legal Bases
- Top-Down Approach
- Energy Auditors' Qualification
- Motivation
- Electricity Prices Increase
- EU Experiences

# EU-Russia Discussions

## ➤ Security vs. Economy

- 1997 – Partnership and Cooperation Agreement
- Annual Thematic Group on Energy Efficiency
- 2010 - Partnership for Modernization
- 2013 – EU-Russia Energy Roadmap 2050

A perspective view of a railway track stretching into the distance under a hazy sky. The tracks are made of steel rails on wooden sleepers, with gravel ballast. The background shows a line of trees and utility poles under a bright, overcast sky.

# 1. Legal Bases



# Legal Bases Evolvement

1996

- 1<sup>st</sup> Federal law on Energy Efficiency

2008

- Presidential Decree N 889

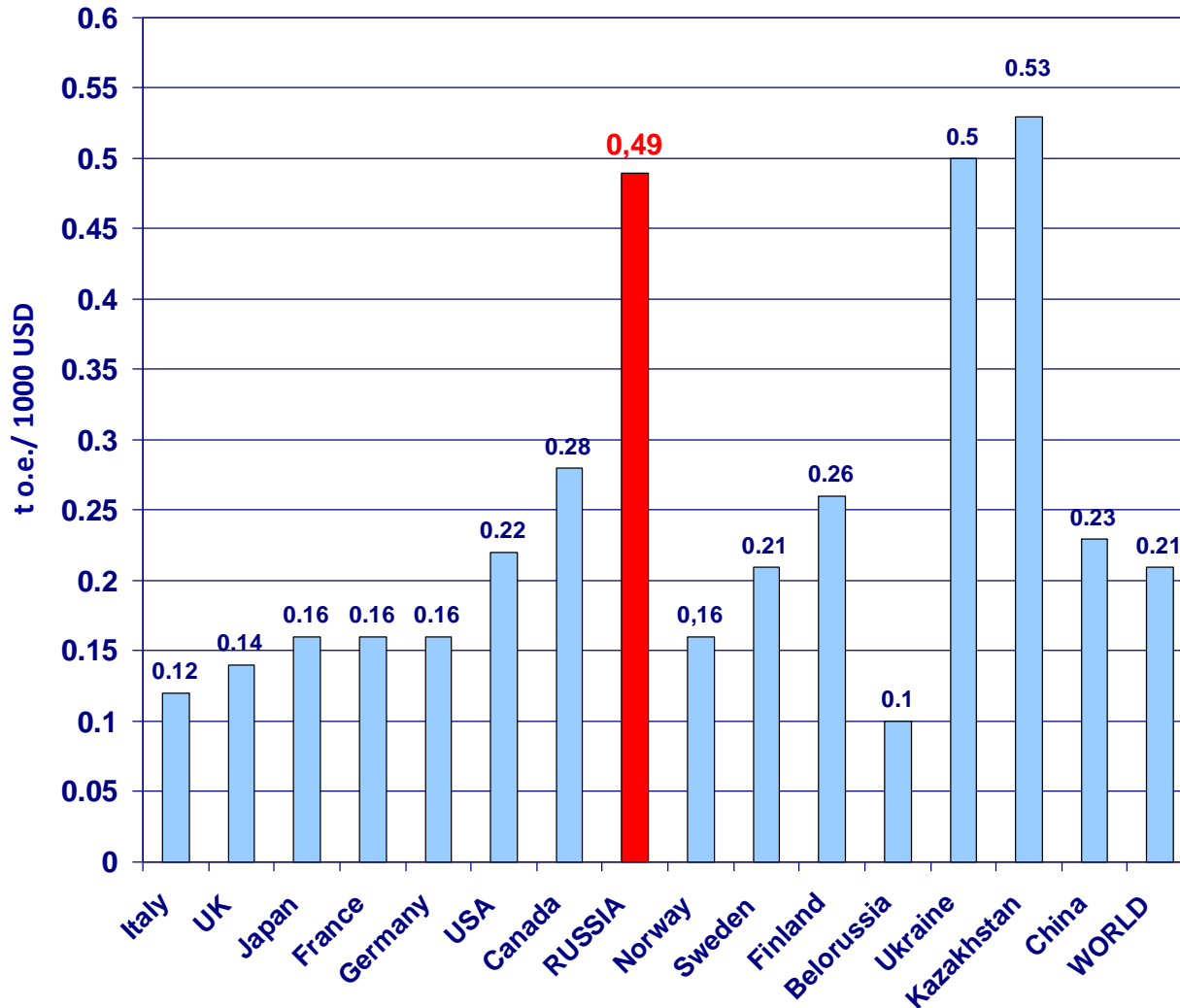
2009

- Federal Law N 261 on Energy Efficiency

2010

- State Program “Energy saving and energy efficiency until 2020”

# Energy intensity of GDP in the world



## Reasons of high energy intensity of Russian economy

Severe climatic conditions

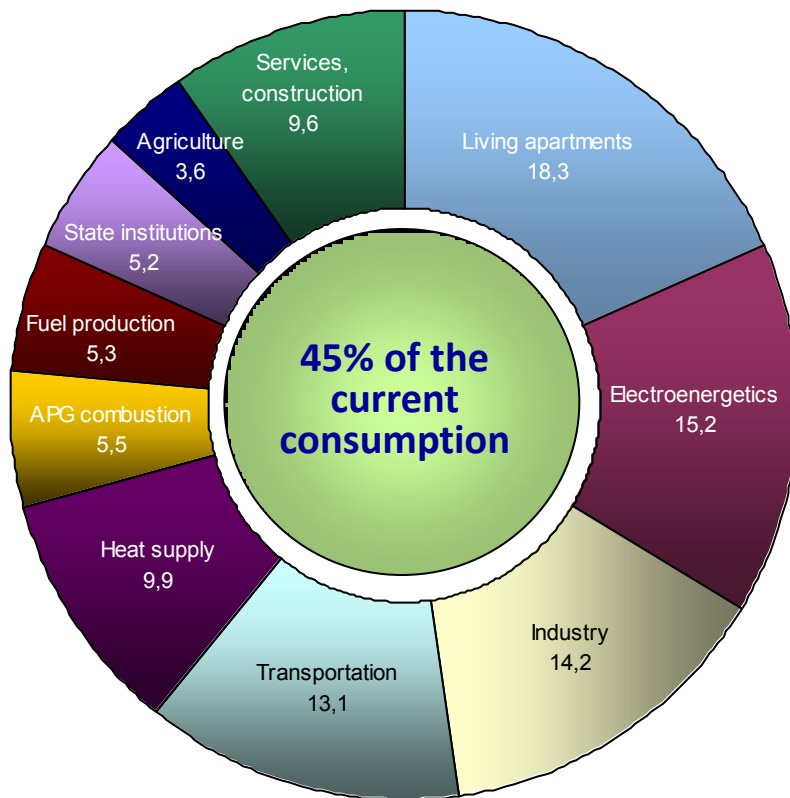
Specific allocation of population and industry; necessity for extensive transport communications

Prevalence of "heavy" energy-intensive industries in national economy

Technological backwardness of some industries

Underestimated price of energy resources in home market, which doesn't stimulate energy saving

# Potential for energy saving in Russia



**Consumption of energy resources can be reduced by:**

**20% in heat supply**

**30% in electroenergetics**

**40% in transportation and industry**

**50% in living apartments**

## **Strategic targets in energy saving and energy efficiency in Russia**

**President D.A. Medvedev**: reduction of energy intensity of Russian GDP by **40%** by the year of 2020 (compared with the level of 2007)

**Energy Strategy 2030**: reduction of energy intensity of Russian GDP by **2.5-3 times** by the year of 2030 (compared with the level of 2007)

- Incomplete regulation
- Lack of economic stimuli
- Lack of financial sources





# Opinion Polls

**Legislation score: 2.23/5**

**Current law: 1.69/5**

**EU law relevance: 1.45/5**



# Comparison to IEA Recommendations

- Buildings: energy audit, energy passports, metering devices, mandatory labeling, Eurocodes
- Industry: energy audit, energy passports, ISO 50001
- Transport: shift to gas, Euro-3 fuel standard, Euro-4 emissions standard for cars
- Lighting: ban on 100 Watt incandescent bulbs
- Appliances: labeling, energy classes
- Result: 47 out of 89

A wide-angle photograph of a deep, narrow fjord valley. The water is a deep blue, and the surrounding mountains are rugged and rocky, with some green vegetation. In the foreground, two children, a boy and a girl, are lying on their stomachs on a rocky ledge, looking out over the valley. They are wearing red shirts and dark shorts. The sky is blue with some white clouds.

## 2. Top-Down Approach





# Examples

Energy audit  
Energy Passports





# 3. Energy Auditors' Qualification



4<sup>th</sup>

Motivation



- 
- A conceptual image showing a giant hand reaching down from the top left towards a small man in a suit standing on a brick-paved ground. The man is holding a briefcase and looking up at the hand. In the background, there is a fountain with water spraying upwards. The scene is set in an urban environment with buildings visible in the distance.
- Long pay-back periods
  - Short-term credits
  - High supplementary costs

# 5. Electricity Prices Increase

The image has a blue-tinted background with a grid pattern. A line graph is overlaid, showing a fluctuating but overall upward trend. In the foreground, there are four stacks of gold coins, with each stack being taller than the one to its left, symbolizing increasing costs or value.



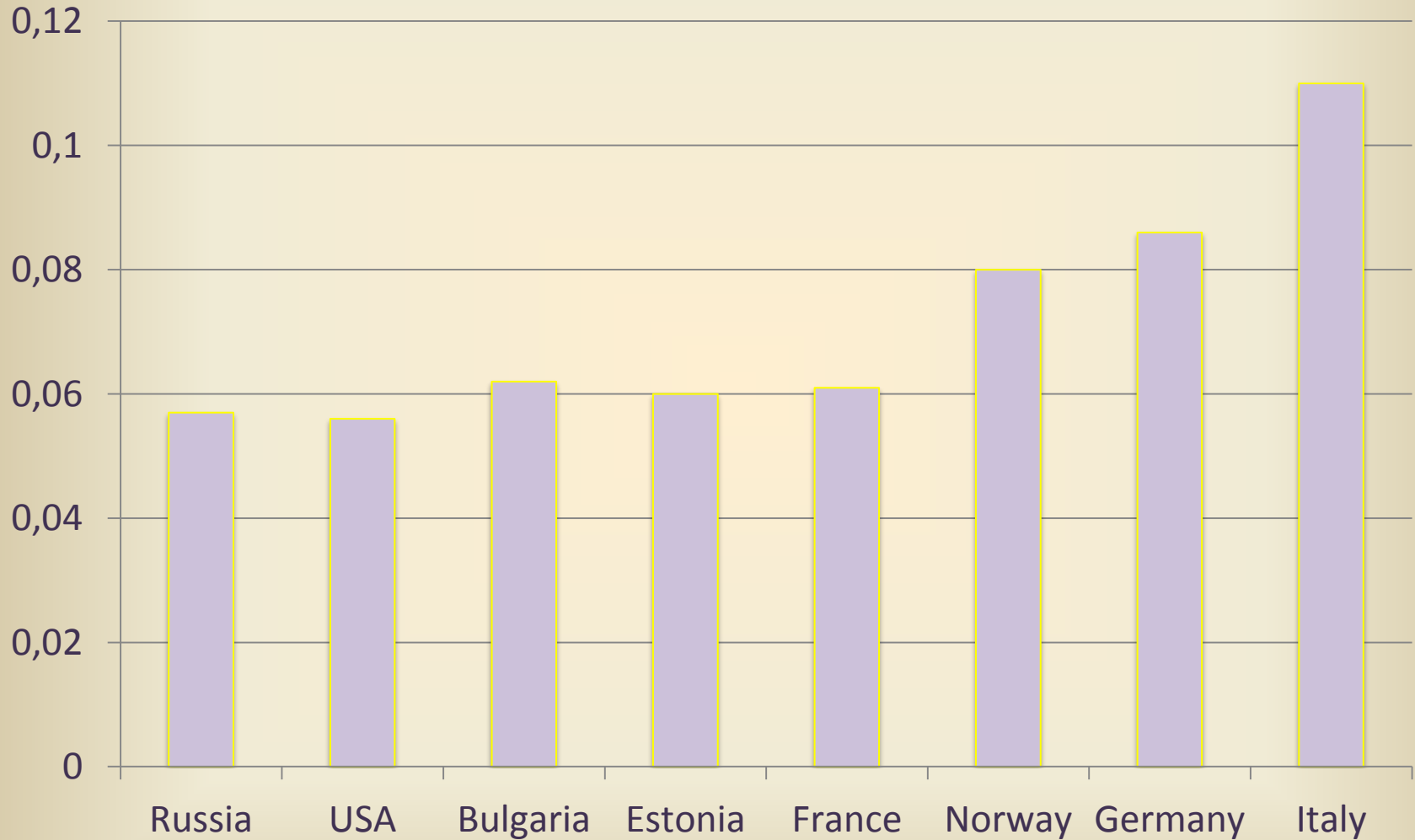
*Rise in Gas Prices*

*Large Investment Programs*



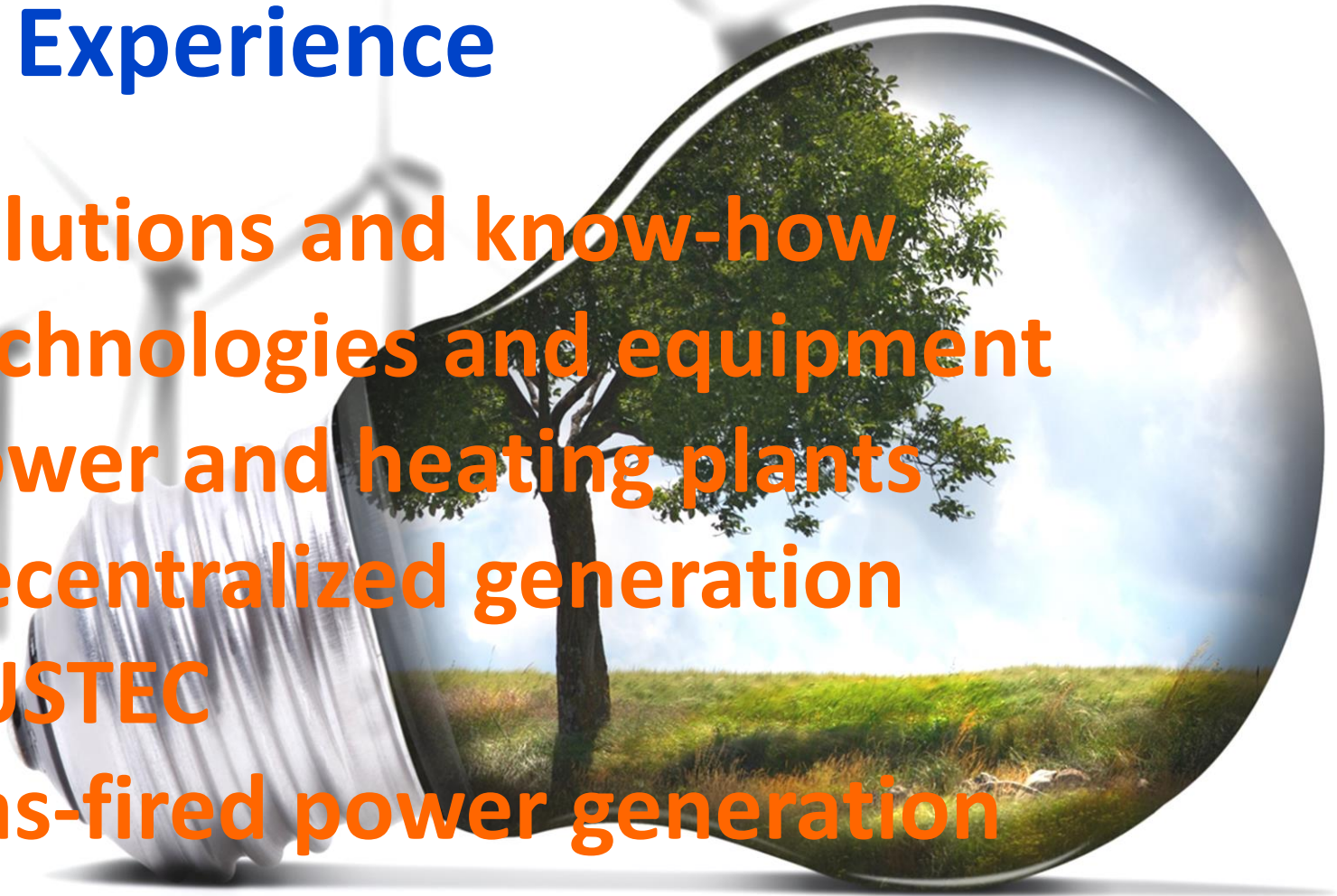


# Electricity Prices for Industry 2010 €/ kWh



# EU Experience

- Solutions and know-how
- Technologies and equipment
- Power and heating plants
- Decentralized generation
- RUSTEC
- Gas-fired power generation



## Strategy for the Development of power grid complex in Russia (April 2013)

- ***“The cost of electricity for final consumers is approaching the cost of autonomous generation and creates a risk of consumers’ separation from centralized generation and collapse of the unified system”.***

# Decentralized Generation

- Exchange of experiences in the regulation of green companies and network operators;
- Development of standards and equipment requirements for decentralized generation
- In particular: Experience of CIGRE (working group SC C6 Distribution Systems and Dispersed Generation);
- Export of small, medium and large-scale generation technologies from the EU countries: China, Germany, France, Switzerland, Great Britain, Hungary, the Czech Republic and Austria.

# RUSTEC

- Land transmission lines vs. underwater network infrastructure
- Scarcely populated area
- Potential for hydro use
- Electricity supplies via Finland, Estonia and Latvia
- **New law on Renewables: serious obstacles for European companies**



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