

Implementation of Kyoto protocol mechanisms in Russian power sector

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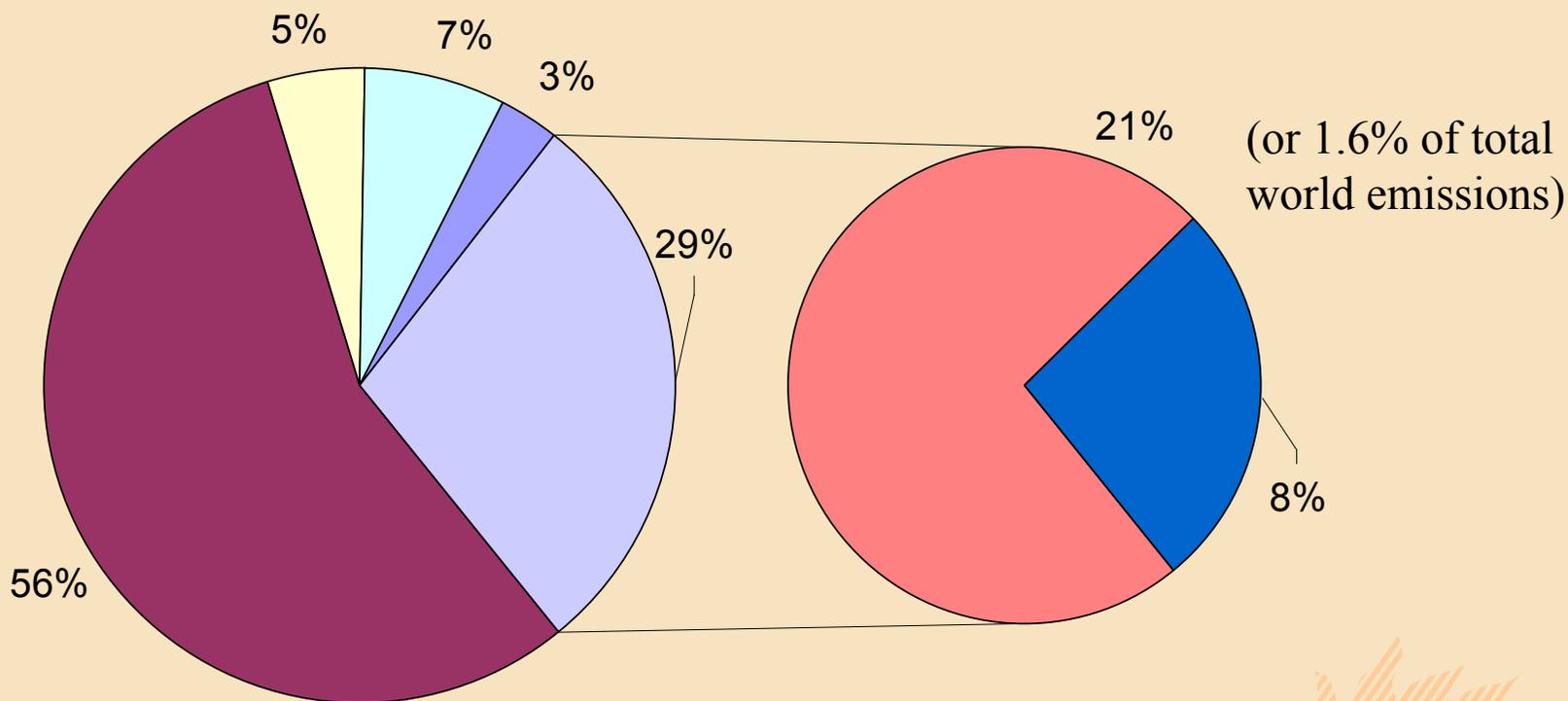
RAO UESR in 2006

- Installed capacity 159.2 ths. MWt (72% of total installed capacity in Russia)
- Power generation 695 bln. kWt*h (70% of total power generation in Russia and about 3.8% in the world)
- Heat production 477.8 mln. GCal (33% of total heat production in Russia)
- Share of power generation on fossil fuels – more than 80%



Structure of GHG emissions in Russia

(according to Fourth National Communication and RAO UES estimates)



Power&heat

Other energy

Industrial processes

Agriculture

Waste management

RAO UESR

Other power&heat



Power consumption dynamics: approaching the maximum



Growth rate in 2006 - 4,2%



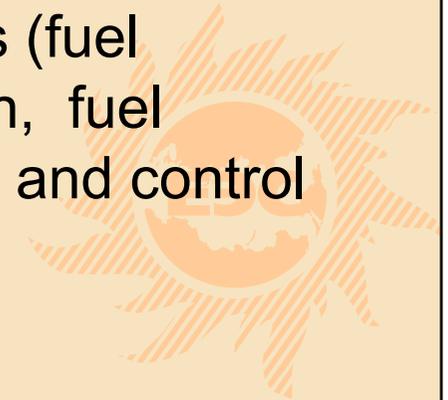
RAO UESR interest in JI projects

- **Vast investment program includes construction of new power generating capacities using modern highly efficient equipment**
➔ **opportunity to attract additional investments**
- **High portion of old and low efficient equipment on existing power plants** ➔ **need for replacement/modernization**
- **Non-conventional renewables constitute much less than 1% of total generation** ➔ **good perspectives for future development**
- **A lot of projects cannot be implemented due to insufficient economic efficiency** ➔ **additional sources of financing needed**



Main types of projects in RAO UESR

- Combined Cycle instead of Steam turbines
- Renewables, including:
 - small and medium hydro power plants (incl. construction of new and rehabilitation of existing)
 - wind power plants (on-shore and off-shore)
 - geothermal power plants, etc.
- Fuel switch
- Improvements in district heating systems
- Complex power plant energy efficiency improvements (fuel preparation system, condenser, turbine modernization, fuel combustion optimization, variable speed motor drives and control systems installation, cooling tower repack etc)

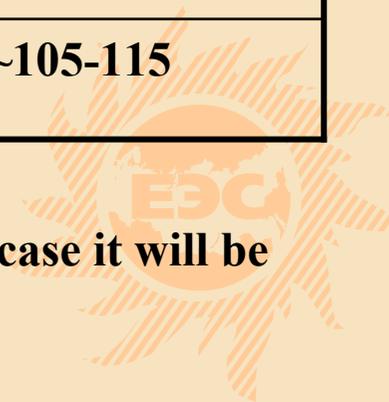


«Carbon potential» of RAO UESR

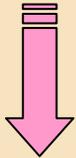
Status	Emission reductions in 2008-2012, mln. tones
Investment projects ready for financing using Kyoto mechanisms with PIN's prepared	35
Investment projects under consideration	~20
Energy efficiency improvement	~ 25-30
Investment projects reducing emissions but not eligible under Kyoto protocol	~ 25-30
Total potential	~105-115

Also:

- Possible emission trading basing on “green investments” scheme (in case it will be implemented)



Our actions



- Energy Carbon Fund foundation
- Detailed inventory of GHG emissions from RAO UESR sources
- Corporate Greenhouse gas information system development
- Analysis of all projects included in RAO UESR Investment program
- Pilot project on energy efficiency improvement with RWE
- Preparation of specialized project documentation (PIN's, PDD's)
- Search for potential “carbon investors”



Necessary steps

- **In the short run:**

Begin JI projects registration in Russian Federation

- **In the long run:**

Create on both national and international levels the economic mechanisms, stimulating measures in the field of energy efficiency, energy saving and more active usage of renewable energy



Thank you!

