



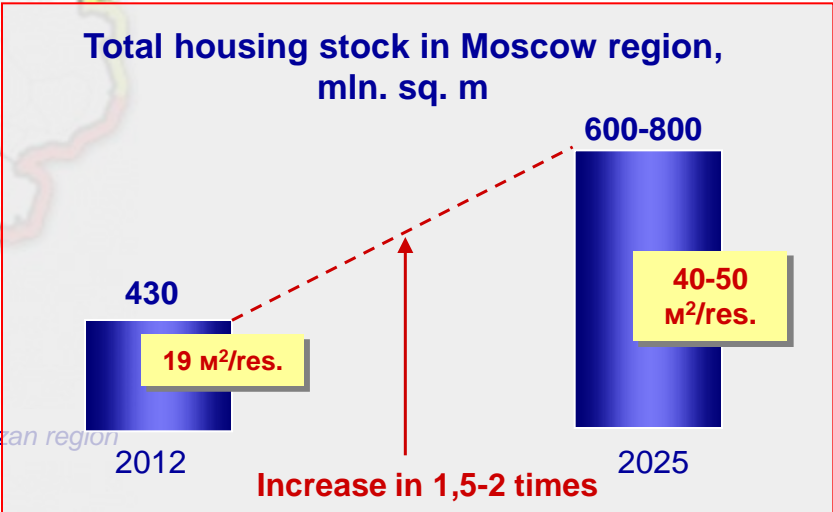
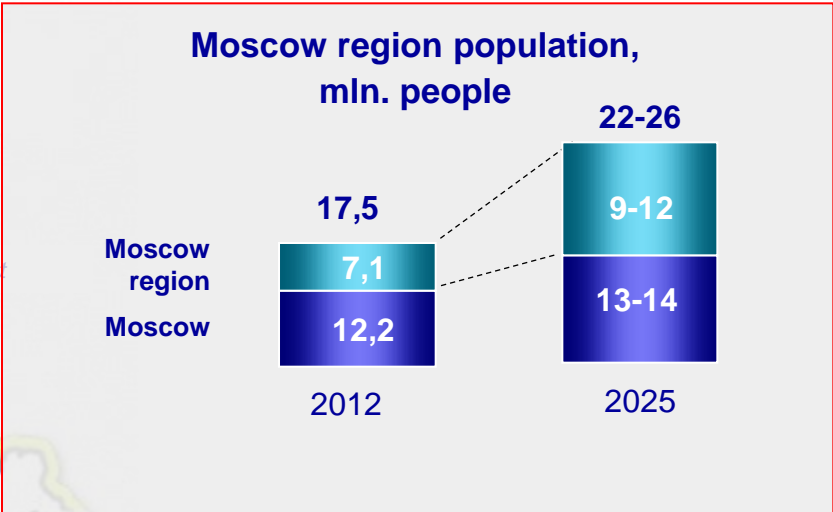
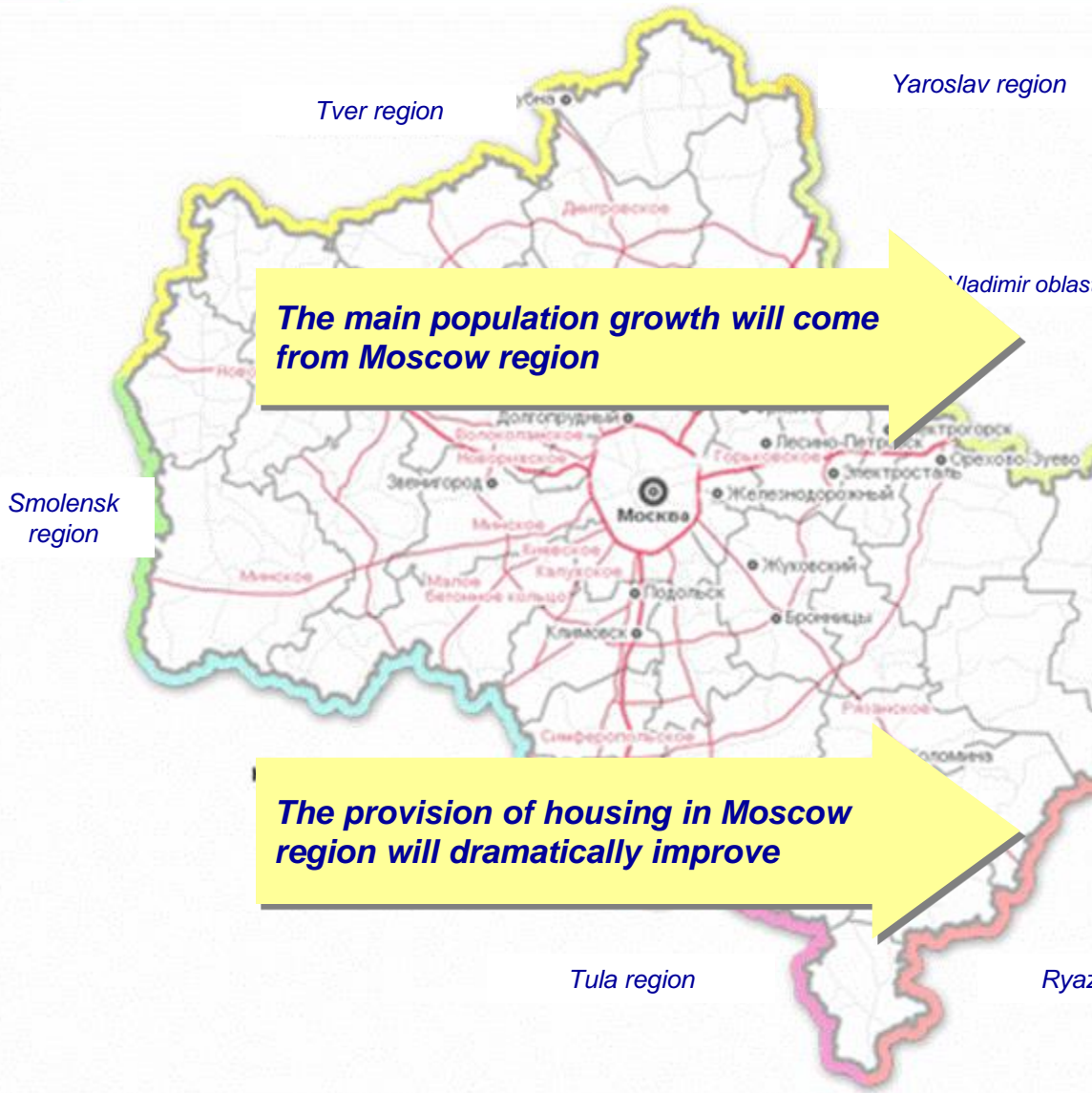
Department for External Economic and International Relations of Moscow

A light gray world map is centered in the background of the slide.

Moscow Energy Sector: Investment Potential

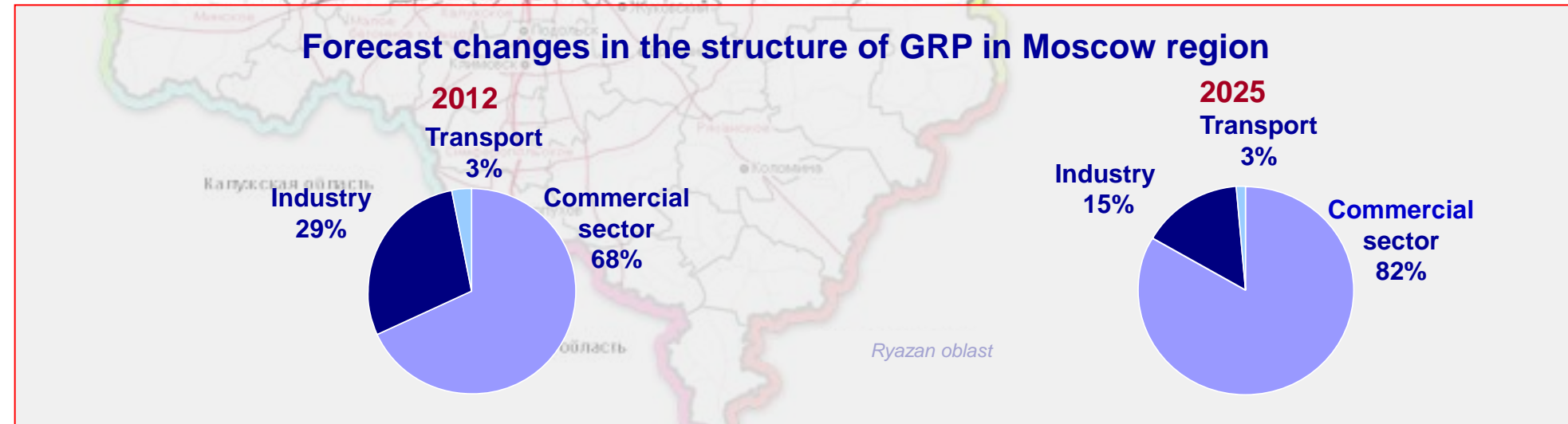
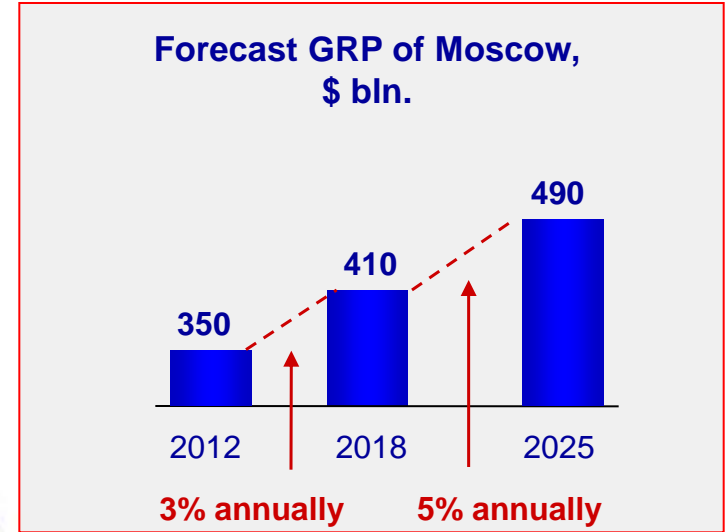
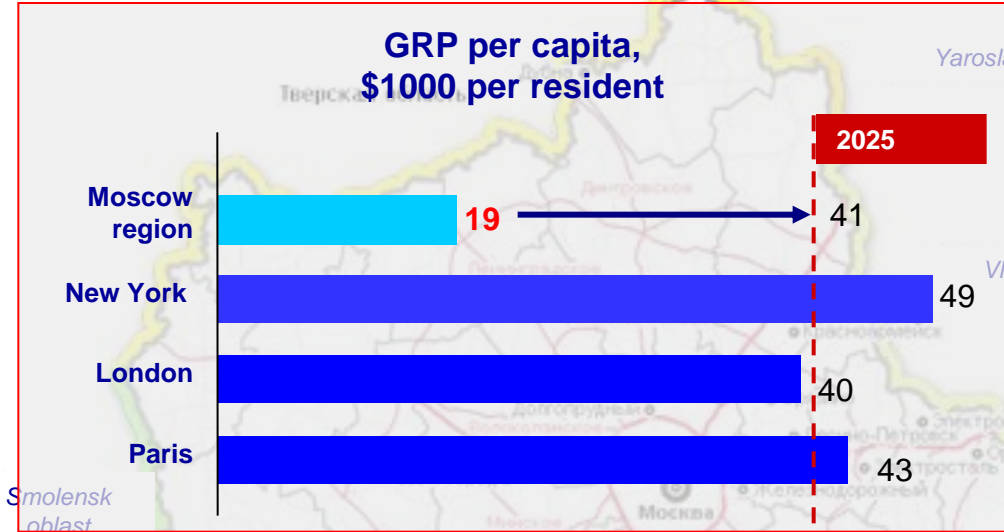
Vakhtang Partsvaniya
Deputy Head of Foreign Economic Affairs
Office, PhD

By 2025 Population and Quality of Life in Moscow Region will Increase Significantly





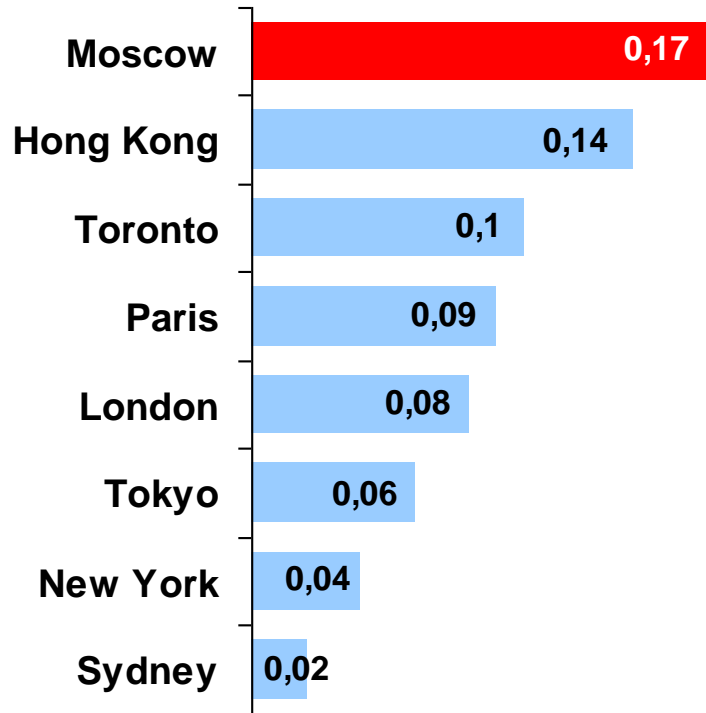
GRP in the Moscow Region will Increase by 2.5 Times, Its Structure will be Significantly Changed





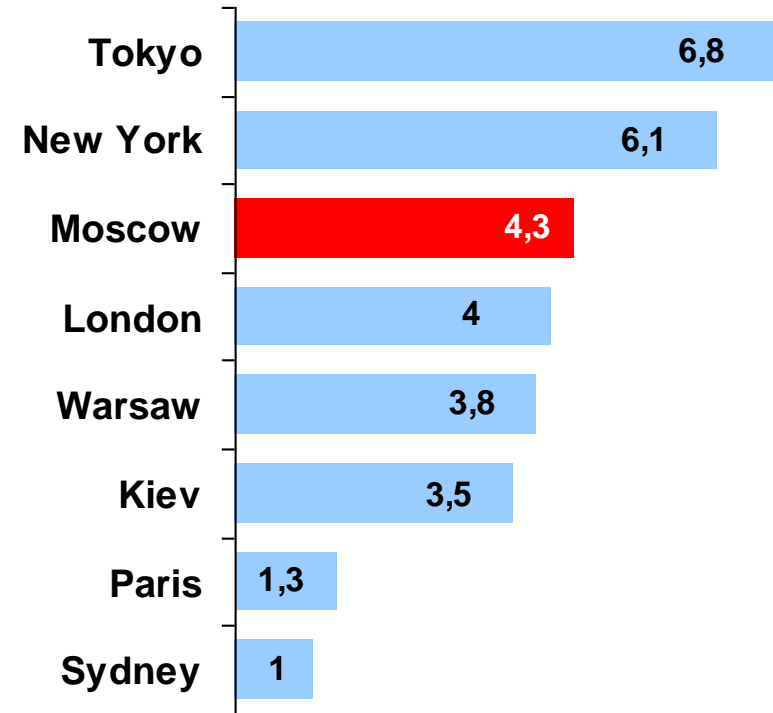
Energy-Output Indicators of GRP in World's Major Cities

Energy consumption per \$ 1 of GRP,
kWh / \$ 1



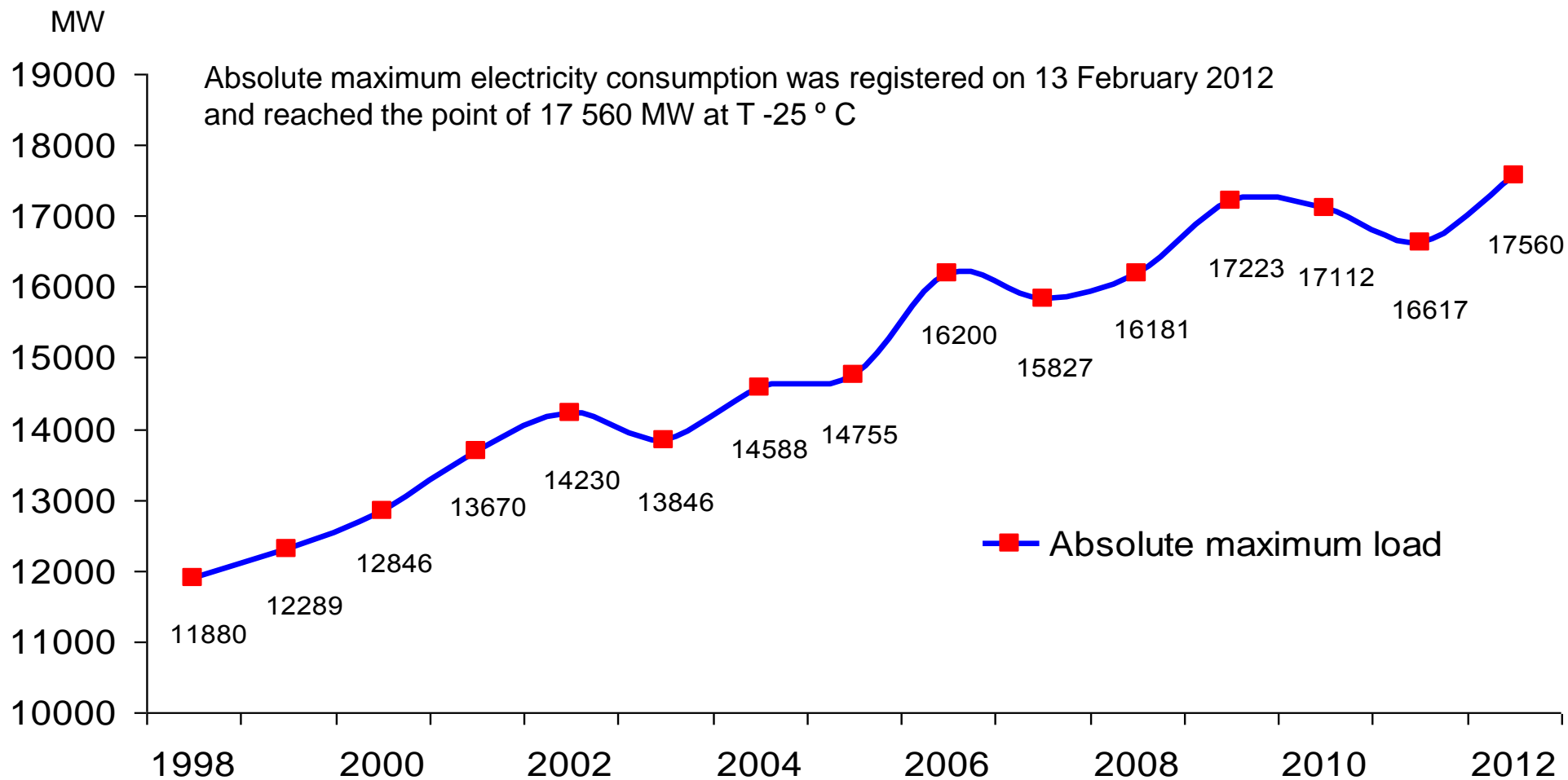
Energy-output of GRP of Moscow exceeds that of well-developed cities

Energy consumption per resident,
thousand kWh per resident annually

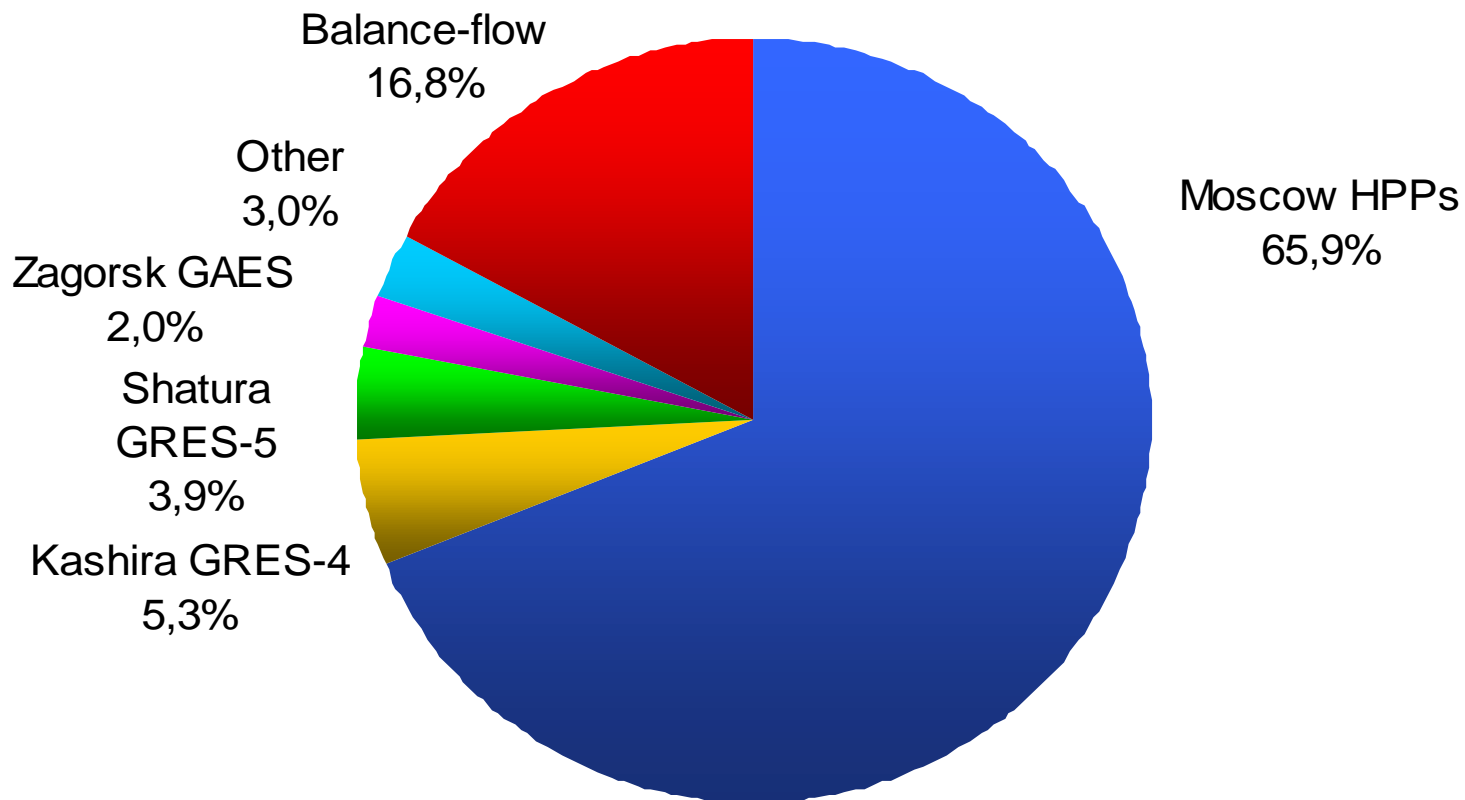


Energy consumption in Moscow is comparable to that of well-developed cities

Electricity Consumption in Moscow Energy Sector



The Structure of Energy Generating Capacities





Priorities

Development programs

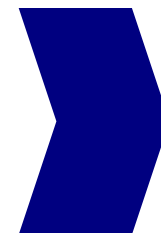
▶ Growth in power generating base, expansion of grid infrastructure, development of energy retail sector

▶ General Scheme of Energy Supply in Moscow by 2020

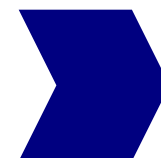
▶ Energy saving and introduction of energy efficient technologies into the sector

▶ The state program “Energy Saving in Moscow in 2012-2016 and up to 2020”

▶ Optimization of management and state regulation in the sector



The potential for investment projects

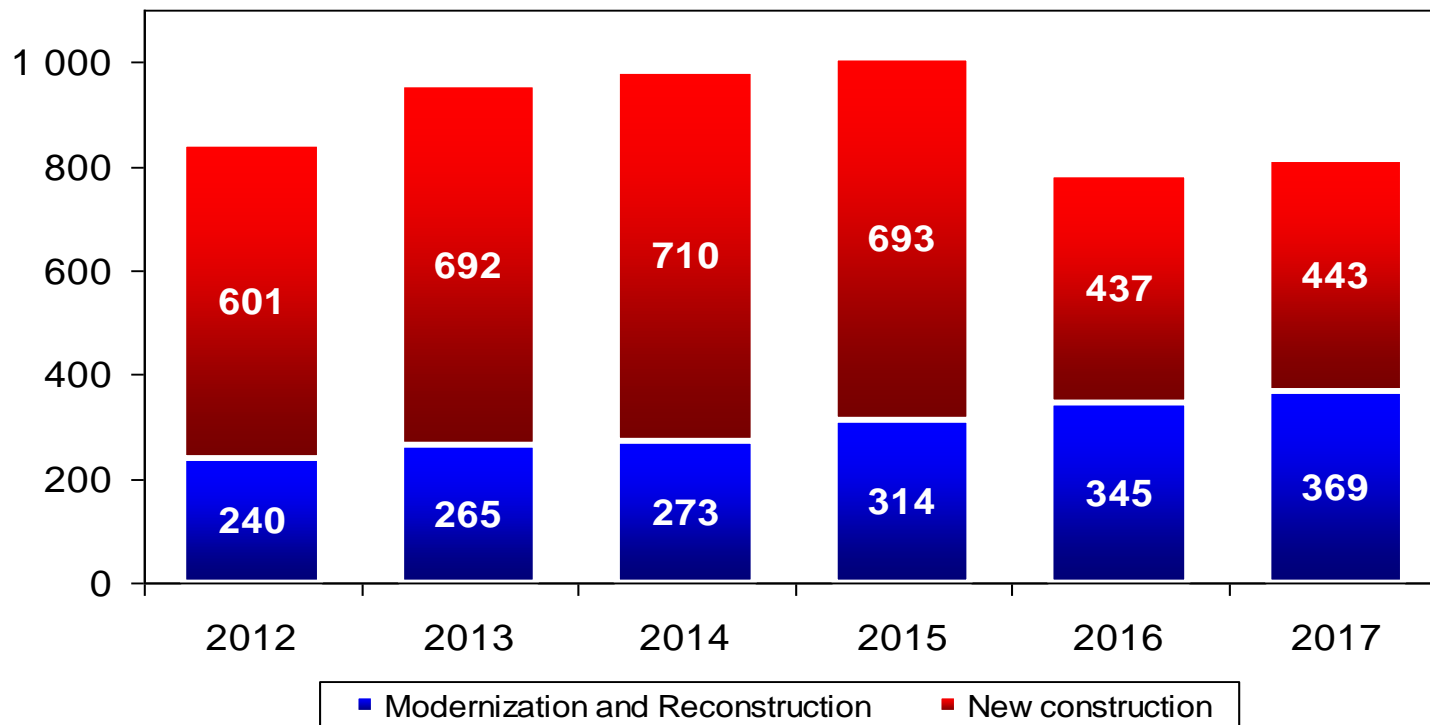


The potential for cooperation

Power Generating Capacities Development



mln. USD



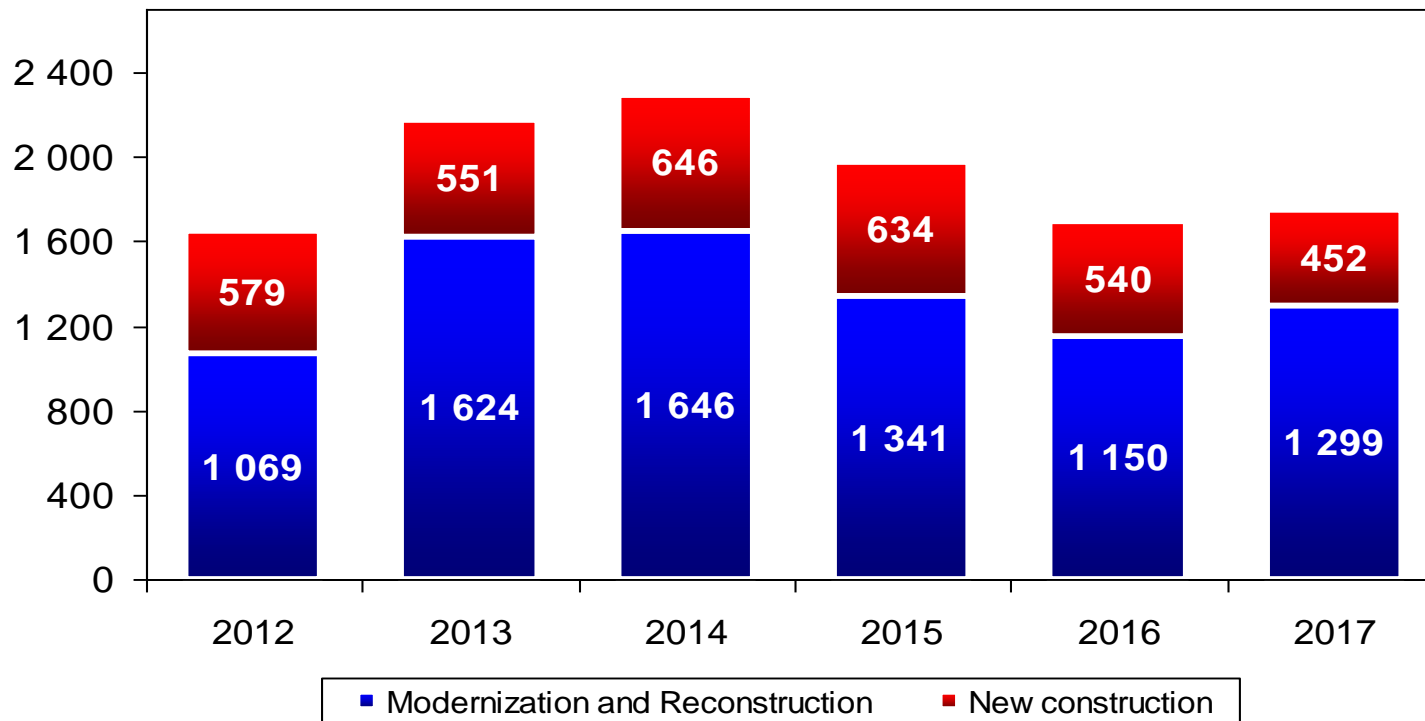
Total 2012-2017:

5.382 bln. USD

Grid Infrastructure Development



mln. USD

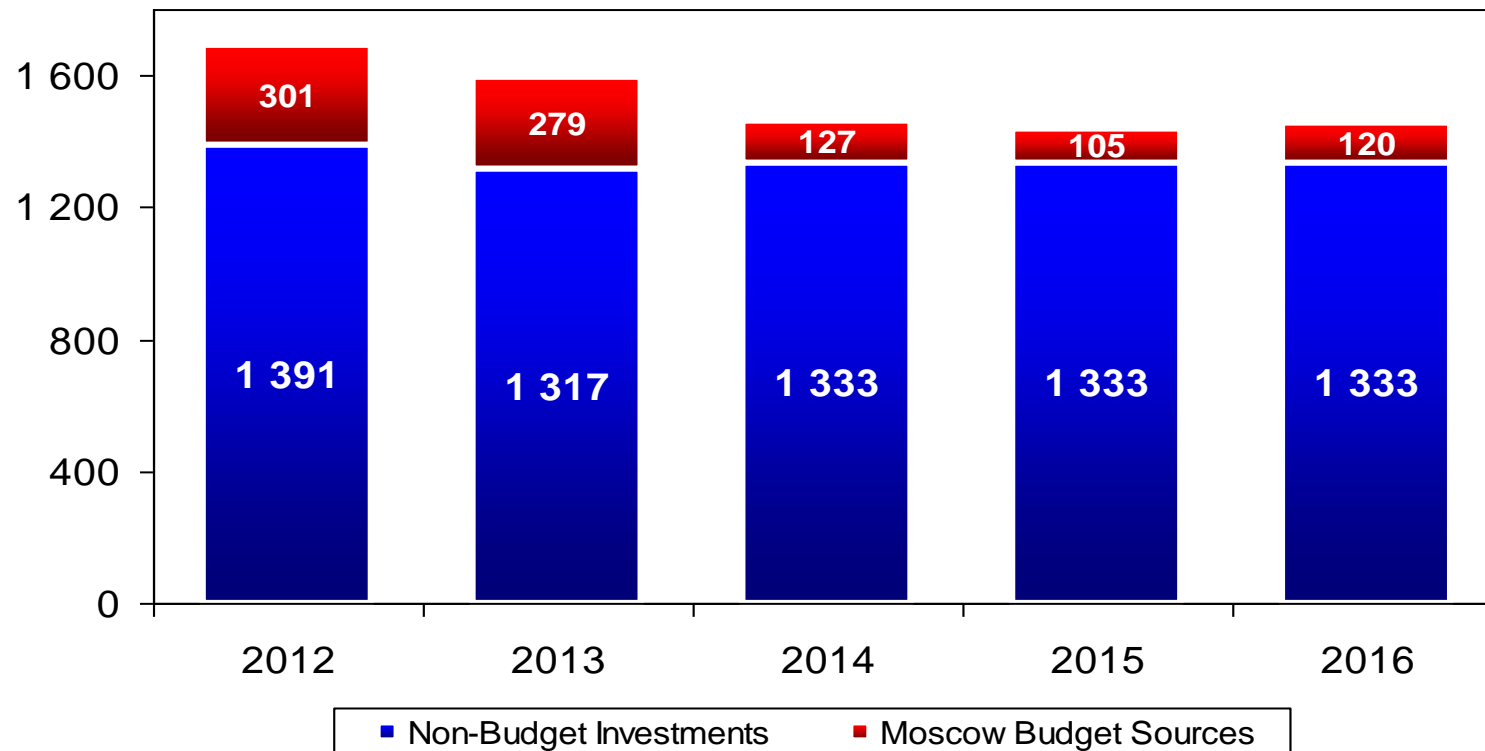


Total 2012-2017:

11.531 bln. USD

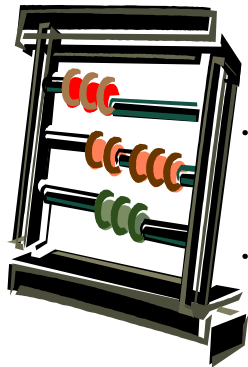


mln. USD



Total 2012-2016:

7.639 bln. USD



EC
34%

EC
34%

Electrical network is a passive element of the energy system

Regime management through administrative methods

Energy Generation

In gas sector – replacing steam power cycle to combined-cycle

In coal sector – application of Circulating fluidized Bed Technology and Virtual Valve Technology

In hydropower sector – development of pumped-storage hydro stations and mobile power plants

Energy Distribution

Application of Flexible AC Transmission Systems (FACTS), new technologies of energy distribution to the direct current (DC Converters), technologies of high temperature superconductivity

Energy Dispatching

Radical update of information and information technologies based on the SCADA-EMS.

Creating a three-tier technological and vertical dispatching centers

Creation and maintenance of the electricity market, ancillary services market and balancing market

EC
>50%

EC
42-46%

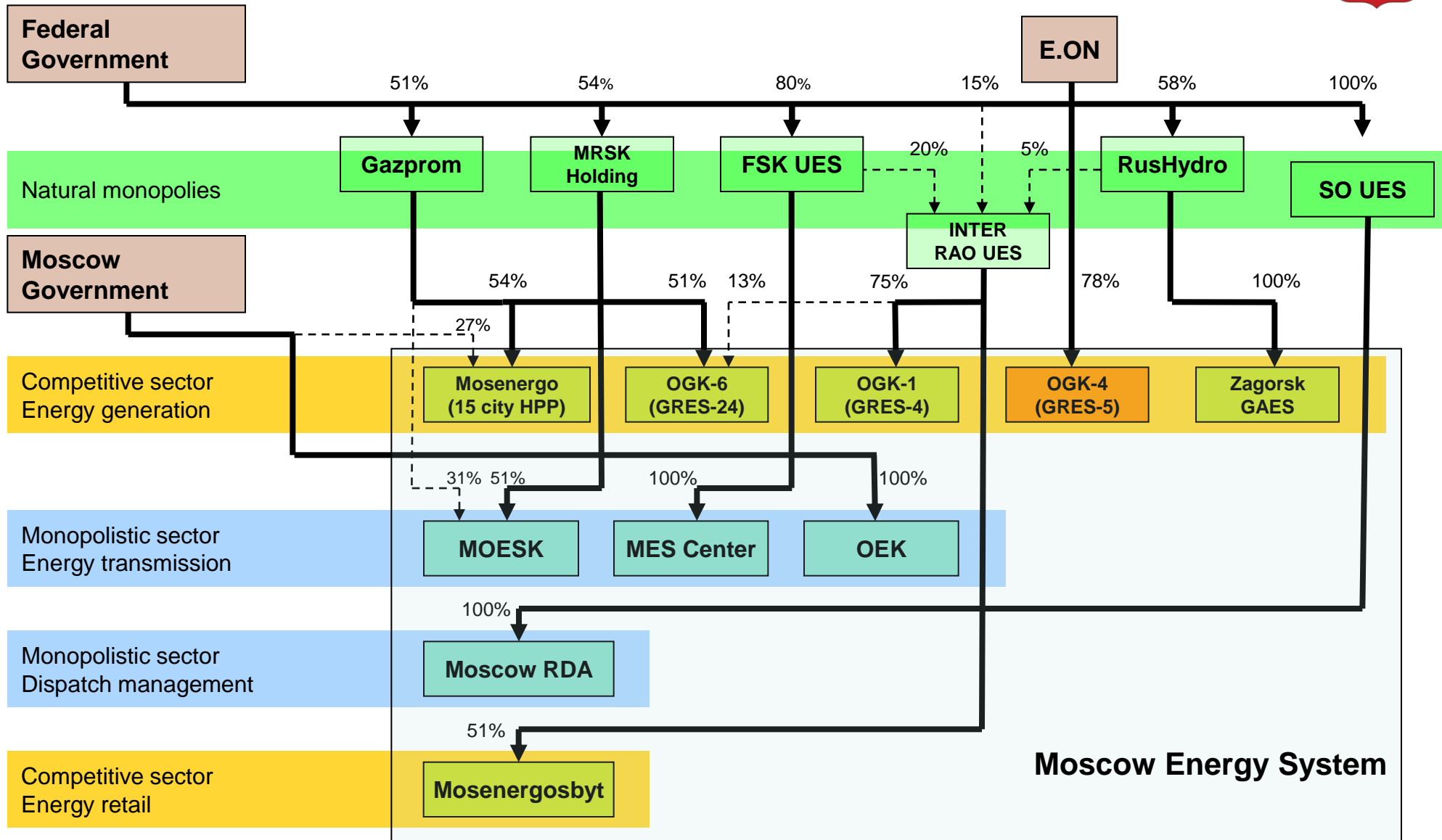
Electrical network are becoming an active part of power system able to change the flow of energy and electricity

Regime management through economic motivation of the market participants





Structure of Moscow Energy System: Key Companies





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