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# **Energy efficient cities in Russia: priorities and challenges for the future**

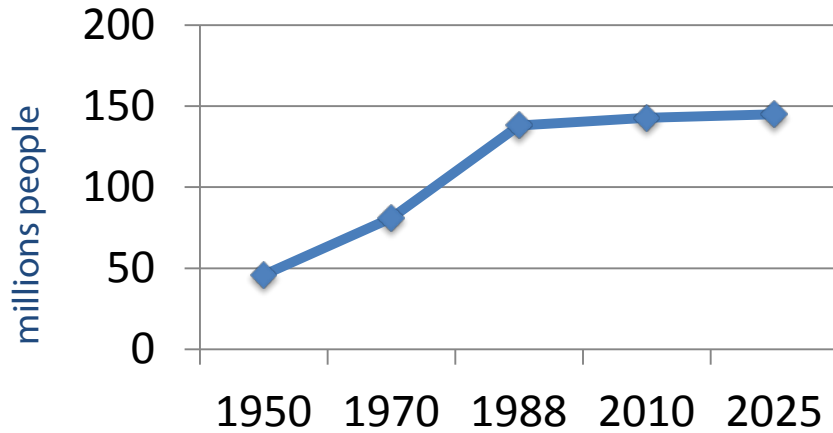
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Director

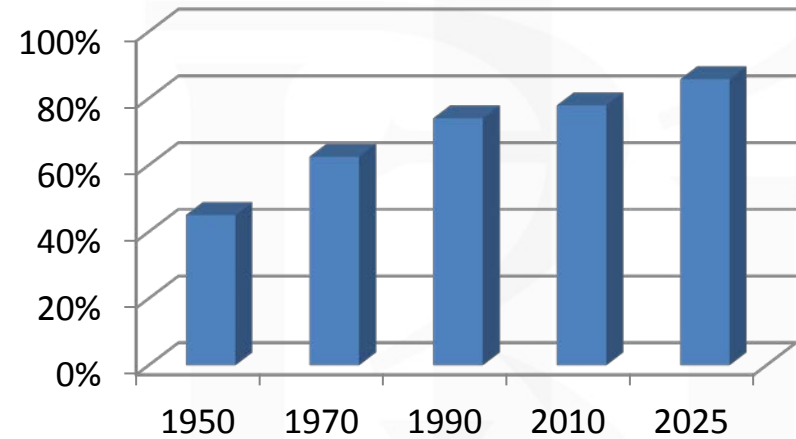
Institute of Pricing and Regulation of Natural Monopolies HSE

Higher School of Economics

# Russia belongs to countries with a relatively high level of urbanization



**Population of Russia**



**Urban population, %**

According to the last census in Russia:

- **≥1100 cities+towns**
- 163 cities+towns with population  $\geq 100\ 000$  people
- Urban population  $\approx$  **75%**

1. Use of energy-efficient (LED) light sources in street lighting and in the public sector.
  2. Improving the energy efficiency of buildings: automatic weather regulation of heat consumption.
  3. In small settlements - transition to modern low-carbon technologies ( including autonomous and combined sources of energy supply based on renewable energy sources with the use of storage devices and diesel generators).
- Demo shows of the use of wind and solar energy sources have been created in cities to popularize these technologies.

**The goal of the study** is to identify targets, disseminate knowledge about best practices and identify the most competitive and promising technologies for implementation.



# The Benchmarking: draft to discuss

## SMART CITIES



- SHARE OF HOUSEHOLDS WITH DATA COLLECTION AUTOMATED SYSTEM FOR MANAGEMENT OF RESOURCE CONSUMPTION(%)
- SMART APPLICATIONS AND IT SERVICES FOR RESIDENTS (YES/NO)
- SHARE OF DIGITAL SUBSTATIONS (IEC 61850) IN POWER SUPPLY SYSTEM
- UNIFIED DATA CENTER FOR COLLECTION AND PROCESSING OF URBAN SERVICES DATA FOR FORMATION OF BIG DATA

## HEATING AND COOLING



- TYPE OF HEATING/COOLING SYSTEM
- SHARE OF BUILDINGS WITH DECENTRALIZE HEATING/COOLING SYSTEM (%)
- SHARE OF HEAT GENERATED IN CHP (%)

## RENEWABLE



- SHARE OF ELECTRICITY GENERATED AT RENEWABLE ENERGY (%)
- SHARE OF DIFFERENT TYPES OF RENEWABLE WIND. SOLAR HEATING PUMP. PELLETS (%)

## TRANSPORT SECTOR



- SYSTEM OF REGULATION OF TRAFFIC FLOWS (YES/NOW)
- SHARE OF TRANSPORT USING GAS. DIESEL ELECTRICITY (%)
- SHARE OF CO2 EMISSION FROM TRANSPORT (%)

## BUILDINGS



- BUILDING ENERGY CODE (YES/NOW)
- INCENTIVES AND MANDATES (YES/NOW)
- SHARE OF BUILDINGS WITH HIGH CLASS (%)
- SHARE OF RESIDENTIAL BUILDING WITH CLASS ABOVE AVERAGE (%)

## LIGHTNING



- LOCAL MANDATES FOR STREET LIGHTNING (YES/NOW)
- LOCAL MANDATES FOR ARCHITECTURAL LIGHTNING (YES/NOW)
- SHARE OF LIT STREETS (%)
- SHARE OF LED IN STREET LIGHTNING (%)
- SHARE OF AUTOMATIC SYSTEM OF STREET LIGHTNING(%)

- Research in the field of long-term forecasting and prioritization of scientific, technical, innovative and socio-economic development.
- Development of forecast documents of scientific and technical development of Russia to be approved by the Government of the Russian Federation on the basis of new methodological approaches.
- Development of foresight methodology. The created forecasting tools are successfully applied, including in the field of energy efficiency and energy saving.

Experts of the Higher School of Economics are interested in cooperation with foreign colleagues in the field of city energy efficiency.

On behalf of the Ministry of Energy of the Russian Federation,  
we welcome:

1. Support sustainable city initiative and join to international declaration on sustainable city development

2. Participation in benchmarking

3. Participation at the second international meeting of mayors in Moscow «Russian Energy Week 2017» under the auspices of the Ministry of Energy of the Russian Federation, 4-7 October 2017



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# Thank you for your attention!

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