

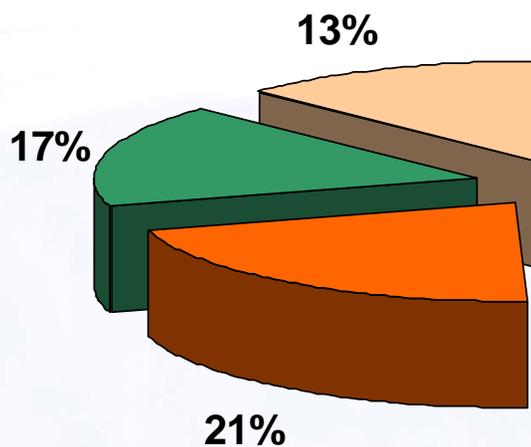
# **Gas Utilization in the Russian Federation**

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# Pattern of Fuel and Energy Consumption in the Russian Federation in 2000-2005

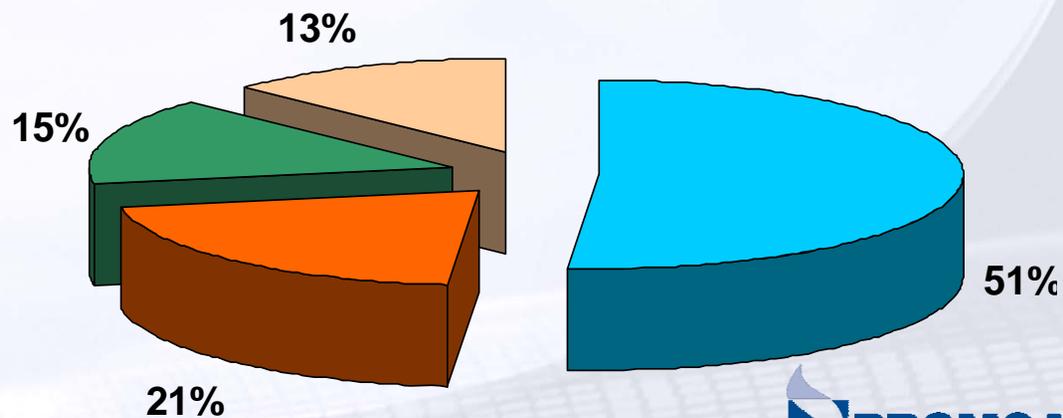


2000

- Natural Gas
- Oil and Oil Derivatives
- Coal
- Other

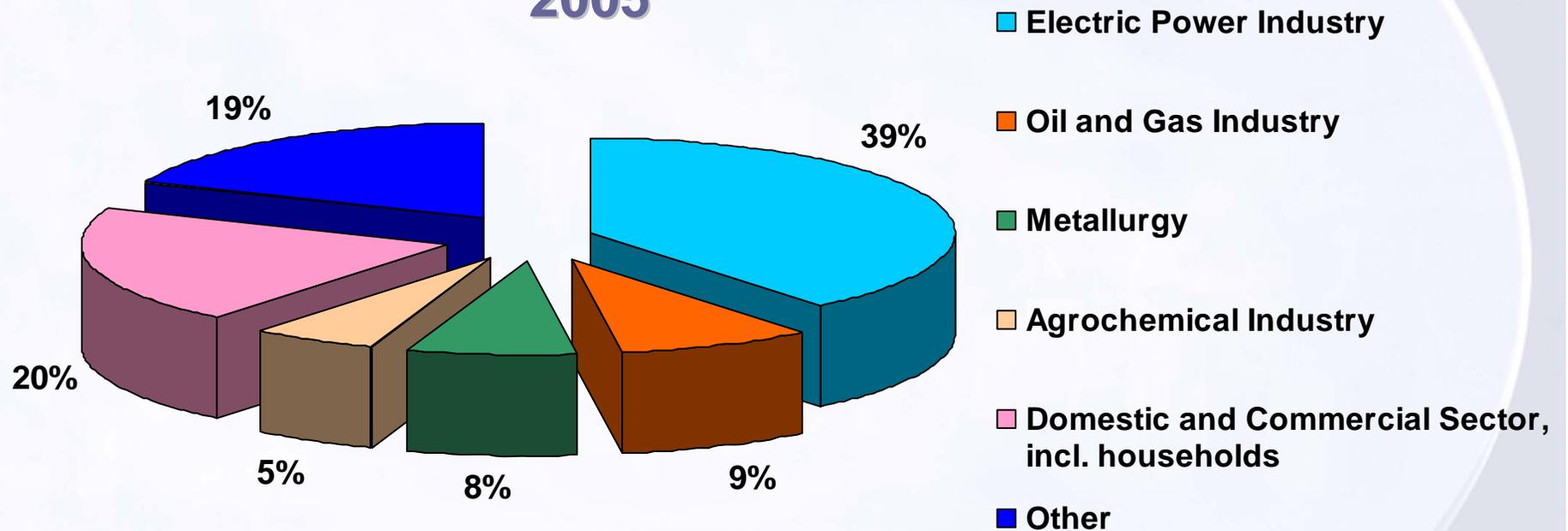
**Increase of gas share in fuel and energy consumption pattern**

2005



## Gas Consumption in the Russian Federation

2005



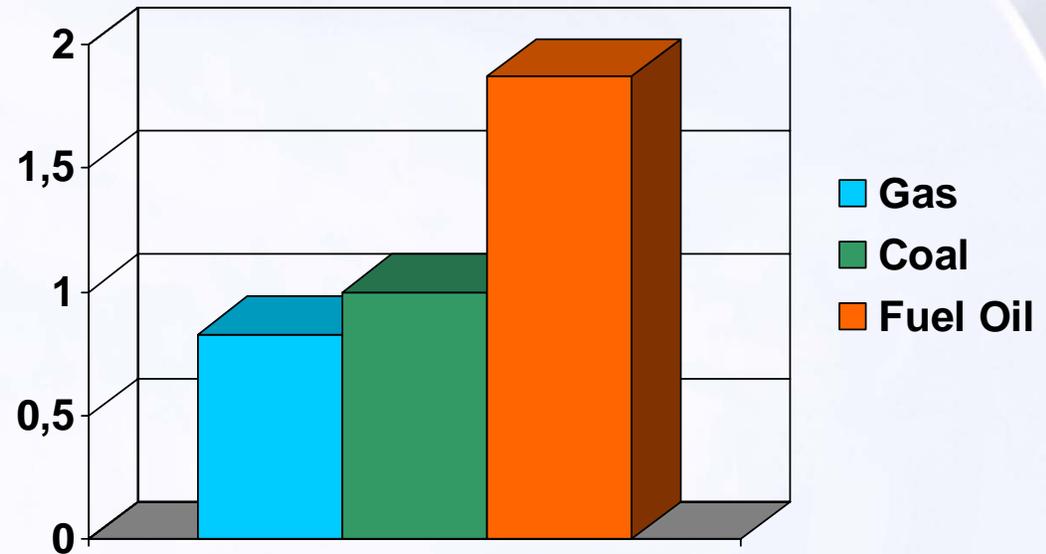
**Consumption by Electric Power Industry stands for nearly 40% of total gas consumption**

## Consumers of Natural Gas

- 500 heat and power stations
- 18,9 thousand of industrial enterprises
- 175 thousand of domestic and commercial sector enterprises
- 44,3 thousand of boiler houses
- 41 million of households
- 52000 automobiles

# Pricing Policy

Price ratio: major energy resources to coal



**Imbalanced prices for energy resources hinder efficient and sustainable gas use**

# What Stands Behind Low Efficiency of Gas Utilization

- Imbalanced energy prices
- Absence of universal energy consumption metering and control
- Deterioration and slow renovation and replacement of fixed production assets
- Low efficiency of energy-using applications
- Considerable energy losses in heat and power transportation

## Gas Saving Opportunities

Gas saving opportunities resultant from decrease of specific gas consumption and gas consumption pattern improvement make 43 billion m<sup>3</sup> per annum and include:

- 15 billion m<sup>3</sup> of gas in the Electric Power Industry;
- 20 billion m<sup>3</sup> of gas in the industrial sector.

Gas saving opportunities in transportation and utilization of heat and electricity make 45 billion m<sup>3</sup> per annum.

**In 2005 gas saving opportunities totaled 25% of current consumption.**

## Priority Goals

- Market-based energy pricing
- Gas meters and controls universal implementation
- Construction of new heat and power stations, reconstruction of old ones, including conversion to steam-and-gas cycle
- Mini heat and power stations implementation for decentralization of heat supply
- Replacement of obsolete and deteriorated equipment
- Waste gases recovery
- Liquidation of losses in heat and electricity grids



## Gas Saving Opportunities: Substitution of Gas by Other Fuels

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Substitution of gas by coal in the electric power production will allow to annually release:

- 6 billion m<sup>3</sup> of gas - due to increase of coal-fired generating capacities operating hours
- 17-24 billion m<sup>3</sup> of gas - due to converting electric power stations with remaining coal infrastructure to coal
- 20-30 billion m<sup>3</sup> of gas - due to construction of new electric power stations employing new coal combustion technologies

35-45 billion m<sup>3</sup> of gas could be released annually due to increase of generating capacities of existing nuclear power stations and to construction of new nuclear power stations

**By 2030 up to 105 billion m<sup>3</sup> of gas can be annually released due to substitution by coal and nuclear energy**



## Conclusions

- Natural gas is of key importance to the fuel and energy balance of the Russian Federation;
- Gas production and supply increase as well as energy saving intensification will underlay development of fuel and energy complex of the Russian Federation;
- Maximum feasible gas saving potential in the Russian Federation is estimated at 25% of domestic gas consumption;
- Attraction of best international practices and expertise can greatly contribute to creation in the Russian Federation of conditions favourable to energy efficient projects implementation.