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# **Russian energy price subsidies**

# **The effectiveness of energy pricing policy is very much determined by energy demand to price elasticities**

- Few studies are available to identify the price elasticity coefficients for the groups of Russian energy users; these studies mostly focus on electricity consumers.
- Russian consumers negatively respond to energy price signals;
- Elasticity is lower in absolute value than elasticities for similar consumer groups in advanced economies.
- Price elasticity for
- industrial power users varies in the range -0.12 to -0.45;
  - for agricultural users from -0.1 to -0.2;
  - for commercial users is close to -0.1;
  - for residential users from -0.17 to -0.28.
- The economic price elasticity is a function of what may be called technical price elasticity: the technical ability to measure consumption and to adjust it according to price signals.
- As more Russian consumers are getting equipped with energy meters and regulation devices, the absolute value of price elasticity will be scaling up.



# Evaluation of energy subsidies is to be done with caution

- First, subsidies for natural gas consumption are evaluated based on the difference of netback gas wholesale prices and average domestic wholesale prices.
- The estimates for netback gas wholesale prices are very different, when gas contract prices or European spot market prices are used. In the latter case, IEA reports small amount of natural gas subsidies for 2009 and about zero subsidies for 2010<sup>[1]</sup>.
- Second, RF Tariffs Service uses a different price formula to estimate netback gas contract wholesale prices, than IEA.
- Therefore, estimates based on price-gap approach are very different depending on the price formula used.
- Third, the IEA approach is based on the marginal cost theory (opportunity cost), which is only applicable when small quantities of natural gas are saved through the subsidies removal and then sold.
- With large gas savings in Russia (15 to 37% of the total annual OECD Europe gas consumption) the equilibrium gas price for combined Russian and European gas markets would be above that in Russia, but much below the present European price. Therefore, gas price “subsidies” may be 30-50% below the estimated level if price-gap approach is used

<sup>[1]</sup> World Energy Outlook 2010. OECD/IEA. 2010.





# Evaluation of gas subsidies is very speculative

	Units	2008	2009	2010
<b>IEA assessment of subsidies</b>	<b>billion US\$</b>	<b>53.8</b>	<b>33.6</b>	
<b>natural gas</b>	<b>billion US\$</b>	<b>30.7</b>	<b>18.7</b>	
<b>electricity</b>	<b>billion US\$</b>	<b>23.2</b>	<b>14.9</b>	
<b>Average domestic wholesale price*</b>	<b>ruble/1,000 m<sup>3</sup></b>	<b>1,642</b>	<b>1,899</b>	<b>2,406</b>
<b>Netback wholesale price*</b>	<b>ruble/1,000 m<sup>3</sup></b>	<b>4,180</b>	<b>6,768</b>	<b>4,679</b>
<b>“Subsidy”</b>	<b>ruble/1,000 m<sup>3</sup></b>	<b>2,538</b>	<b>4,869</b>	<b>2,273</b>
<b>Total subsidies</b>	<b>billion rubles</b>	<b>1,047.1</b>	<b>1,929.9</b>	<b>932.1</b>
	<b>billion US\$</b>	<b>41.9</b>	<b>60.9</b>	<b>30.8</b>
<b>Gas savings due to subsidies removal**</b>	<b>million m<sup>3</sup></b>	<b>127,516</b>	<b>203,294</b>	<b>77,937</b>
<b>Gas consumption in OECD Europe</b>	<b>million m<sup>3</sup></b>	<b>543,597</b>	<b>556,813</b>	<b>525,436</b>
<b>Share of Russian gas savings in gas consumption in OECD Europe</b>	<b>%</b>	<b>23.5%</b>	<b>36.5%</b>	<b>14.8%</b>
<b>Netback wholesale price calculated from the new equilibrium price for combined Russian and OECD Europe gas market***</b>	<b>ruble/1,000 m<sup>3</sup></b>	<b>3,199</b>	<b>4,297</b>	<b>3,985</b>
<b>Corrected total subsidies</b>	<b>billion rubles</b>	<b>642.5</b>	<b>950.6</b>	<b>647.5</b>
	<b>million US\$</b>	<b>25.7</b>	<b>30.0</b>	<b>21.4</b>



# Evaluation of gas subsidies is very speculative

- **Estimates of gas subsidies for 2010 vary between**
  - zero (if spot market prices are used as a price-cap) to
  - 21 billion US\$ (if contract market prices are used with the RF Tariffs Service netback pricing formulae for new equilibrium gas price) and to
  - 30.8 billion US\$ (if contract market price is used as a price-cap)
- **Since electricity price subsidies were estimated by IEA based on fuel reference prices, which in Russia's case are based on gas netback prices, they follow the dynamics of gas prices and subsidies.**
- **Therefore, all bottlenecks of the evaluation of gas subsidies are directly applicable to the electricity subsidies assessment methodology, and their scale is also uncertain.**
- **Moreover, there are significant inflated costs in the Russian energy sector (partly due to the depreciation of inflated capital investment costs), against which reasonability of tariffs are tested.**
- **Therefore, the problem is not only underpriced consumers, but insufficient competition on the supply side and unreasonably high production costs, which, under the corruption pressure, are squeezing profits and limiting investment in modernization.**



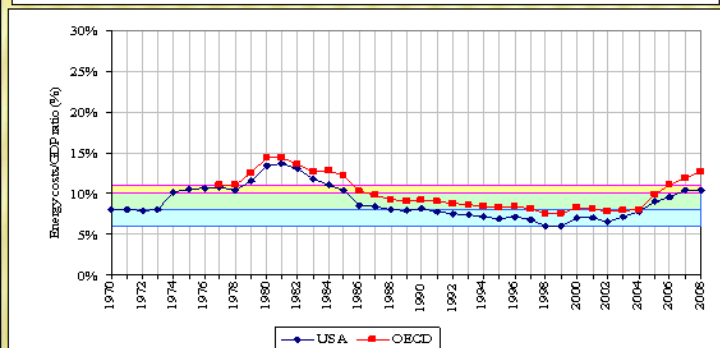
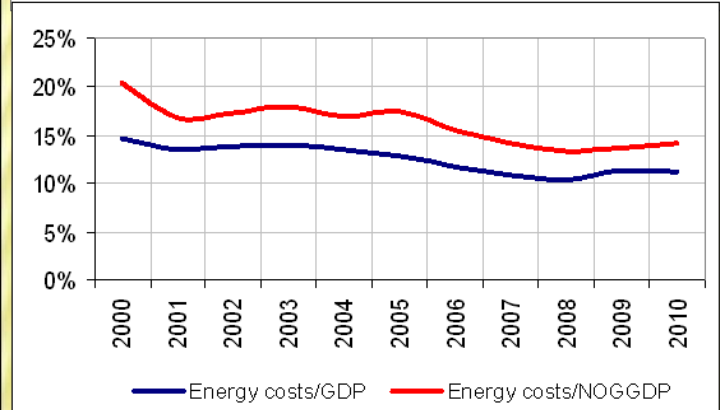
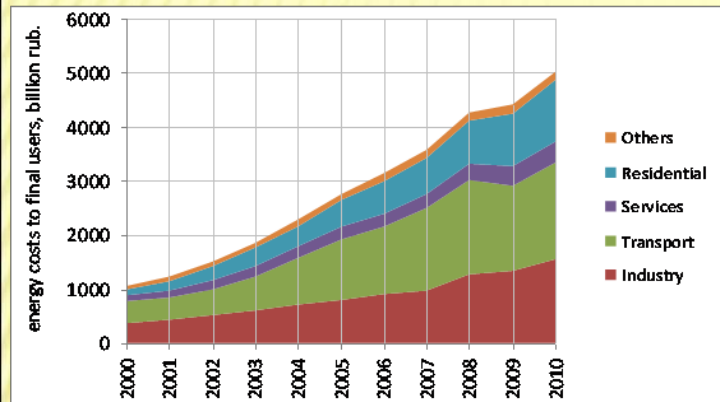


# **There are still different forms are cross-regional or cross-sectoral subsidies, and low income family's subsidies**

- The wholesale gas for residents is subsidized by about 1 billion US\$ at the expense of other consumers.
- The electricity cross-subsidies for residential users were reported about 5-5,8 billion US\$ in 2008-2010.
- Federal budget provided 220 million US\$ in 2008, and 157 million US\$ in 2009 of subsidies to keep electricity prices below costs for those regions with the highest electricity prices.
- Power, heat and gas supply companies received in 2010 over 2 billion US\$ price subsidies from all budgets to keep residential electricity (258 million US\$, heat (1781 million US\$) and gas (both pipeline gas and LNG – 18 million US\$) prices lower of what is called “economically justified” price, which in reality is often seriously inflated.
- Low income families and some categories of households got in 2009 about 2 billion US\$ subsidies to purchase electricity, heat, natural gas and other fuels. In 2010 those shrunk to 800 million US\$.
- So, totally cross-subsidies for acquiring electricity, heat, gas and other fuels for Russian residents may be assessed in 2010 equal to about 6 billion US\$ and subsidies from all budgets (federal, regional, and municipal) – another 2 billion US\$ totaling to 8 billion US\$
- All energy received by residential users according to CENEF's estimates 38,2 billion US\$ were paid (for residents served by housing and utility companies 27,7 billion US\$ energy acquisition expenditures are statistically reported).
- Thus rate of subsidisation for residential users are in the range of 21-29% of total costs. If one assumes that inflated costs are at least 10-15% rate of subsidisation scaling down to 3-18%.



# Energy costs to final energy consumers in Russia: 2000-2010



- In 2000-2010, end-use energy costs more than quadrupled and reached 4,9 trillion rubles
- Nevertheless, due to efficiency improvements energy costs to GDP ratio declined from 14,5% in 2000 to 10,8% in 2010
- Comparison of energy costs to non-oil and gas GDP also shows impressive progress; but the ratio is quite high
- The ratio of energy costs to industrial shipments varied in 2005-2010 in the range of 7-9%, staying much above the values for many advanced economies (4-5%) and undermining the competitiveness of Russia's industry
- In the long-term, energy costs to income ratios are relatively stable with only a very limited range of sustainable variations
- In the USA, the sustainable range of energy costs to GDP is 8-10%, and 9-11% for the OECD countries
- When these thresholds are considerably exceeded, the economic activity slows down
- In many countries, the ratios of housing energy costs to personal income and of personal transport fuel costs to personal income (before tax) vary in the range of 2-4%. In Russia, in 2009 these two ratios were 3,5%, leaving little room for further price growth not mitigated with the EE improvements

