

# NEW ORDER

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**The strategy for utility network renovation in Russia must be based on the principles of ROI and tough technical policy. Renovating utility networks to meet new economic and technical requirements is the only way to attract big investment into a deteriorating industry and ensure the long-term effectiveness of investment without increasing tariffs.**

## There is no way back

So much has been said about the deteriorating condition of utility networks by so many people, there is nothing more to add. Utility network infrastructures (excluding Moscow and some other cities) is either absent or semi-destroyed. It is shocking that only one in three rural communities in Russia has a water pipeline and only one in twenty has a wastewater pipeline (Table 1). According to official data from Rosstat (Office for National Statistics) there are towns in the Far East without water pipelines. Only Northern Caucasus and Southern Russia have wastewater pipelines in every town. Sewer

pipelines are not available in a third of villages of Siberia. In the Northwestern Federal District, only 11% of rural communities have water pipelines and only 3% of them have sewer pipelines. This very district comprises 10% of Russia's territory with over 2 million people in rural communities in Leningrad, Arkhangelsk, Kaliningrad, Novgorod, Pskov, the Murmansk and Vologda regions, Nenets Autonomous District, and the Republics of Komi and Karelia.

Water, sewer and heating supply pipelines have been continuously deteriorating within the last few years. The resources loss dynamics for the national water and heating supply networks clearly shows this trend.

The proportion of water leakage and unaccounted loss of water versus the total volume of water supplied to the networks has increased 1.5 times from 15% to 21% (Pic. 1)

The situation in heating supply is exactly the same. The proportion of heating loss has also increased 1.5 times. This is due to wear and tear of the networks (Pic. 2). At the end of 2011, 29% of all heating supply networks required replacement – which equates to 97,000 km of heating supply networks.

The rate of network renovation is below the norm and the list of renovation projects has been growing since 1990s. By 2009, the renovation of net-

**Table 1. Proportion of settlements with water supply and sewer systems to total number of settlements (Rosstat, 2011)**

	Cities		Urban Village		Rural community	
	Water pipelines	Wastewater pipelines	Water pipelines	Wastewater pipelines	Water pipelines	Wastewater pipelines
Russian Federation	100	98	97	81	32	5
including:						
Far East Federal District	97	92	93	68	26	14
Privolzhskiy Federal District	100	98	99	82	46	4
Northwestern Federal District	100	99	95	89	11	3
Northern Caucasus Federal District	100	100	92	92	36	5
Siberian Federal District	100	93	92	65	45	4
Ural Federal District	100	97	100	87	32	5
Central Federal District	100	98	100	91	28	5
Southern Federal District	100	100	100	98	63	8

works decreased to 80% compared to the poor 2005 figures. They have stayed relatively the same ever since (Pic. 3 & 4).

Utility companies spent around 60 billion rubles (see Pic. 5) on energy efficiency measures from 2008 to 2011. However this was not enough to stop resources loss (see Pic. 1) and this sum was spent in vain. (The 'black hole' mechanism in utility networks infrastructure swallows billions of rubles without any economic effect. See more information below).

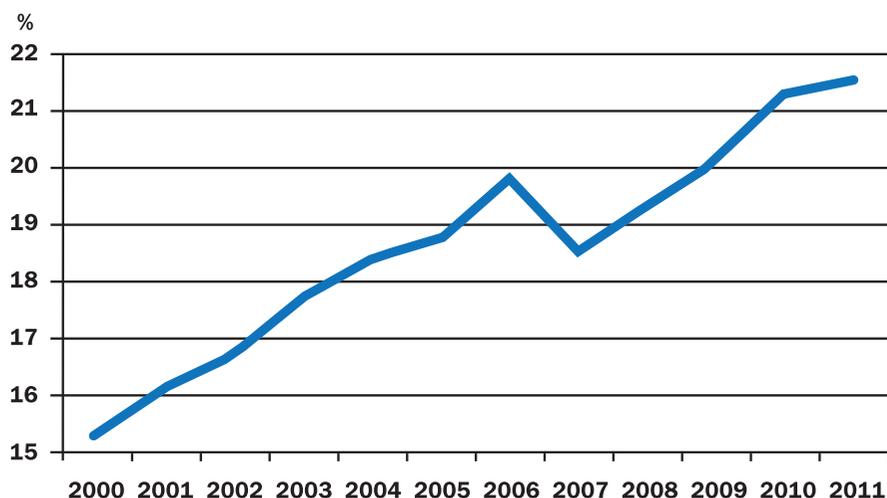
It is obvious that the destruction of the utility infrastructure in Russia is inevitable as it has been impossible to either slow down this process, or to stop it. It is therefore a mathematical fact that Russia's utility infrastructure will collapse in 10–12 years if the dynamics seen in recent years remain the same.

Around 4.5 trillion rubles is needed to stop further deterioration and achieve a neutral dynamic (% of wear = % of replacement) in 10 years using existing networks. This is the estimated cost of the National Production Programme for the replacement of water, hot water and heating and gas distribution pipelines. Starting from 2013–2014, the programme includes a sharp increase (about 3–5 times) in the volume of annual routine repairs and uncompleted projects already accumulated.

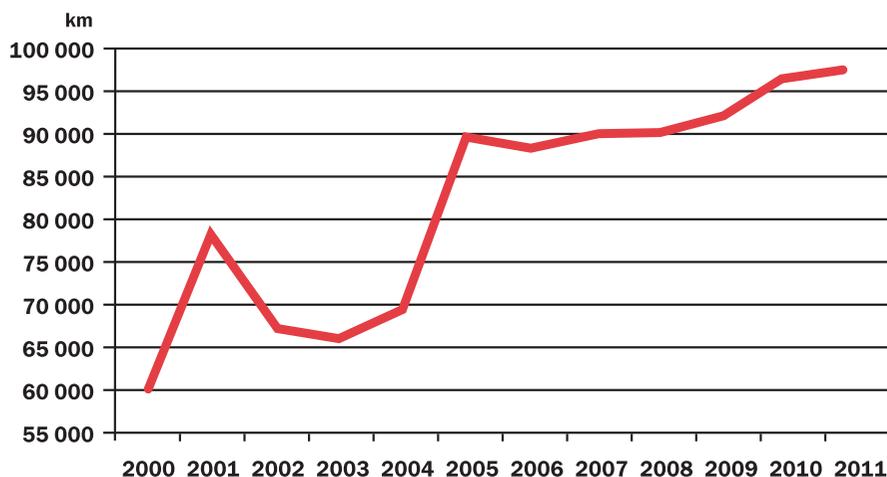
We believe that solving of this large-scale task (which is of obvious benefit and technically possible) should be a Government priority over the next 10 years. It is embarrassing and unacceptable not to have functioning gas, water and sewers in the twenty-first century. The renovation of infrastructure and of housing and utilities is vital to maintain a civilized way of living for the population of these vast territories.

**From Government grants to credits**

What should producers of plastic pipes do in this situation? Experience indicates first panic sets in, followed by at-



Pic. 1. Proportion of water leakage and unaccounted water loss to the total volume of water supplied to the pipelines (Rosstat)



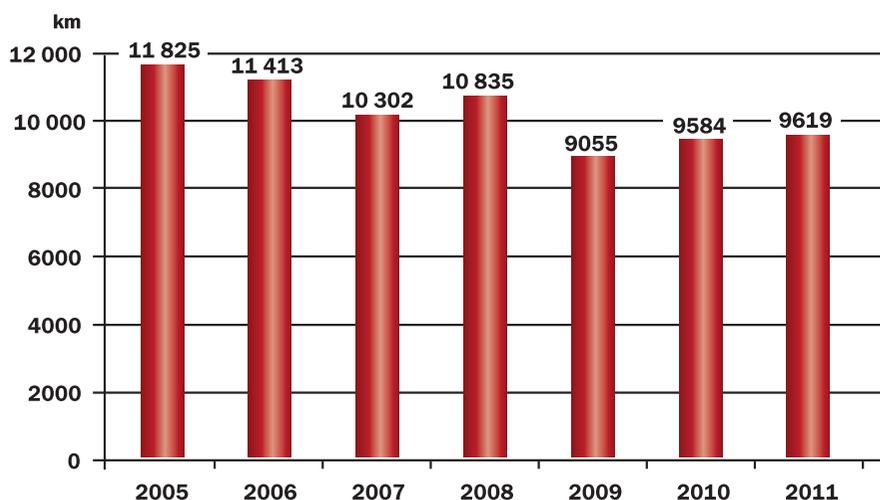
Pic. 2. Heating supply pipelines to be replaced (Rosstat)

tempts to secure as much money as possible from the Government for new programs. Although Government statistics bodies are aware of the infrastructure crisis, it has led nowhere. A significant level of funding is needed to solve this problem and there will never be enough funds to do so. We don't need grants – we need to consider a completely different economic model.

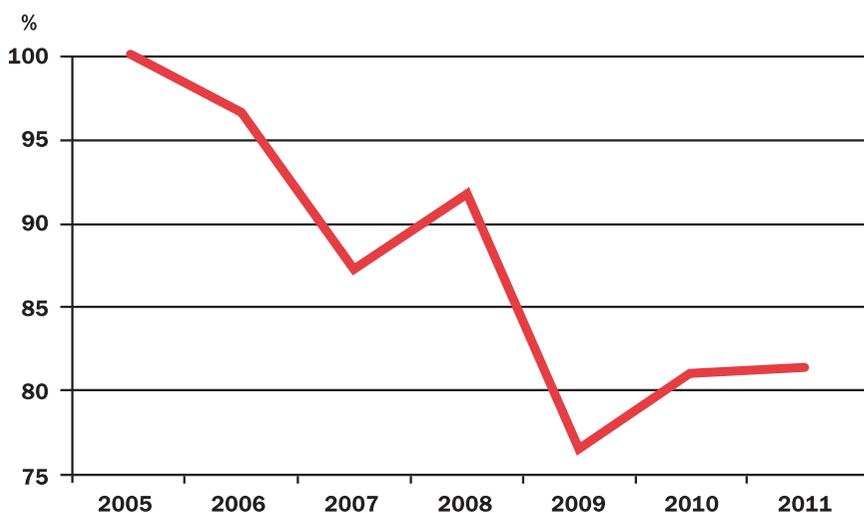
The main weakness of all Government methods for utility sector support is the lack of responsibility for the economic effectiveness (recoupment) of the finished product. The main focus of the receiver of government funding is to overprice the project and quote an

increased price in order to secure the maximum amount of money from the budget. This happens because budget financing is non-repayable and granted based on the quotation. In these conditions, no one is interested in saving money.

Moreover, most of these grants are wasted. They only cover a fraction of the cost of pipeline renovation and even theoretically don't allow utility companies count on economic effect. If only one or two out of ten leaky and rusty pipelines are replaced with traditional steel pipes every season, then you can't expect any real effect from this level of modernization, because in



Pic. 3. Heating supply pipelines replacement, km (Rosstat)



Pic. 4. Heating supply pipeline replacement in percentage compared to 2005 figures (Rosstat)

ten years they will still have to be repeatedly replaced along with the 10th pipe.

All this leads to rises in tariffs and grants whilst networks continue to deteriorate. This 'black hole' burns increasingly more Government money – which comes from the people who are struggling to pay for utility services.

In the meantime, utility companies are also commercial organizations. They must think of how to recoup capital spending and could be motivated to ensure cost effective use of resources.

If money was no longer given away and long-term credits were given to all

utility companies with a condition of repayment by saving on resources and reducing expensive emergency repairs, then the overstatement of costs no longer be beneficial. This is because the recovery of investment and credit repayment will become impossible.

This refers to long-term lending to utility companies for periods of 5–7 years to 10–15 years (depending on company specialty, number of consumers and quality of networks).

Currently, the Russian financial market doesn't offer long-term money which could let the commercial banks raise funds and grant credits.

On the one hand, the huge market for utility infrastructure modernization needs long-term money which can be repaid by the utility company and still avoid exploitative credit. Utility companies can provide repayment using the operational savings resulting from the total renovation of utility networks using modern technologies. Generally, there is longer-term money available in financial markets but it's not being invested in Russia because of financial equity reasons. Two counter-needs are destined to work in tandem with a little bit of help. It's important to show that it works and to initiate the process.

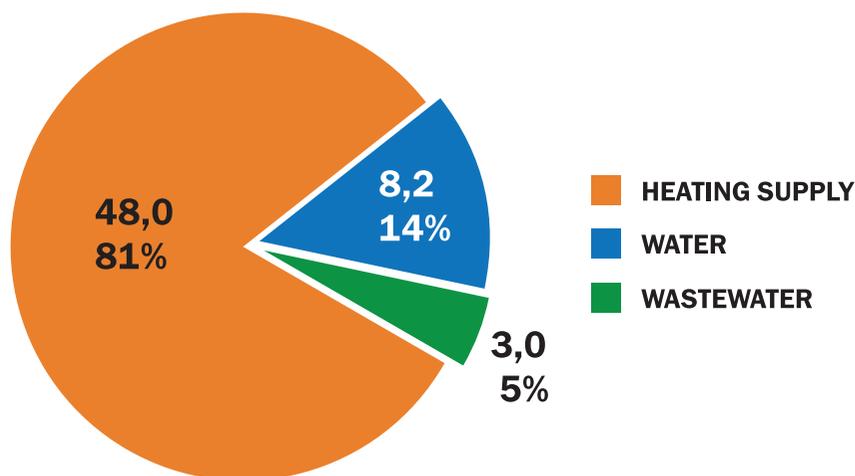
The Government could pilot a financial model for long-term investment in utility infrastructure that will ensure a high degree of reliability and a guaranteed return on investment. The main role of the Government at the initial stages would be to create a model and start the process of long-term credit for the utility sector. The final strategic aim would be to exclude the financial participation of the Government in this process.

Currently the Government can provide long-term money at a reasonable rate to support the pilot scheme (on a national scale) and demonstrate sufficiency of the legislation (and, if necessary, create additional legislation).

For example, long-term (over 5 years) tariff agreements are not stipulated by the current legislation but are also not prohibited. Therefore, theoretically, it is possible to conclude 5 years' agreement and either add an annual extension or conclude the agreement at 12 years.

In this way, there would be no need to reassess the budget and or create new federal target programs.

The long-term crediting of utility companies can be provided by an authorized financial operator in the initial stage. This role could be fulfilled by Vnesheconombank which has experience of financing large-scale infrastructure projects. It could also be done by the Housing and Utility Reform Foundation which has a long-established and tested approach for the financing



**Pic. 5. Spending of utility companies on energy efficiency, bln rubles (Rosstat)**

of large-scale projects in the utility sector.

Moreover, the Government would be able to eliminate the risk of inappropriate expenditure and improper performance using long-term credits for utility renovation. The scheme of granting of credits by a Governmental operator to the utility company must incorporate private operator finance models as well as suppliers of energy efficient equipment and materials proven to be successful in infrastructure modernisation. As a result of this public-private partnership, the Government finance operator could grant credit to the utility company upon program implementation, at the expense of private operator (pic. 6).

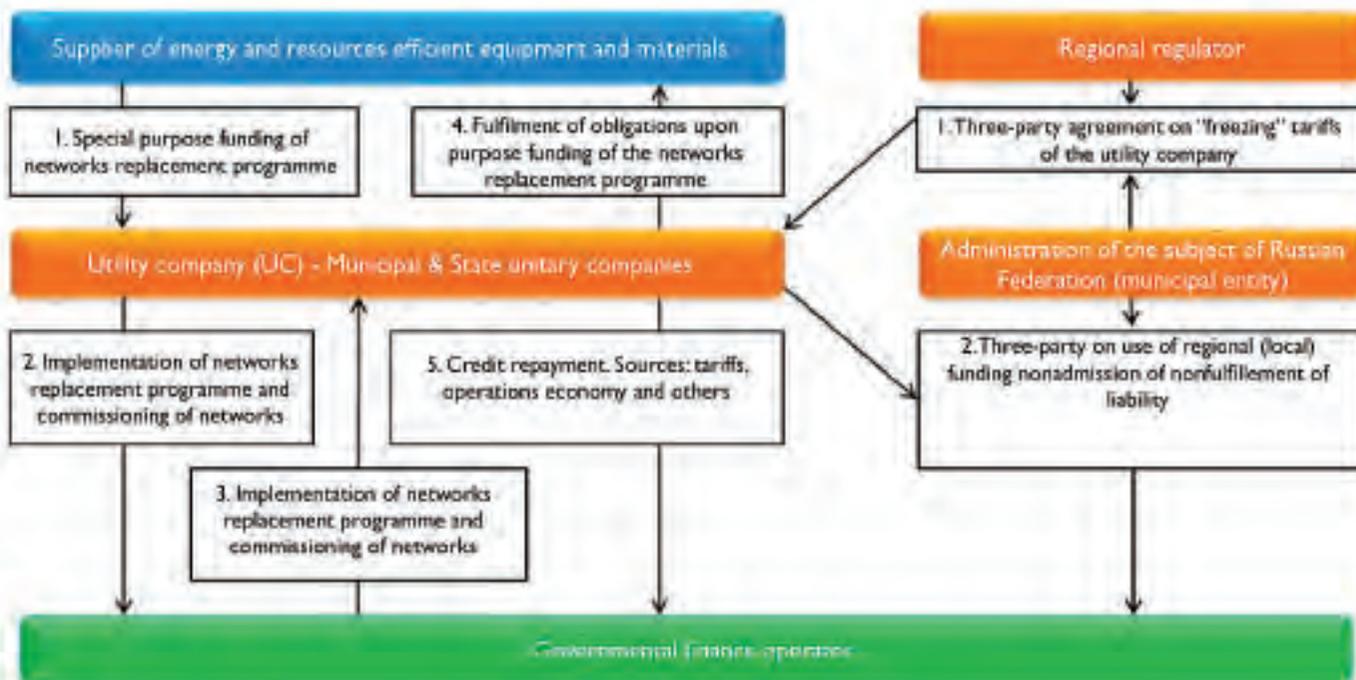
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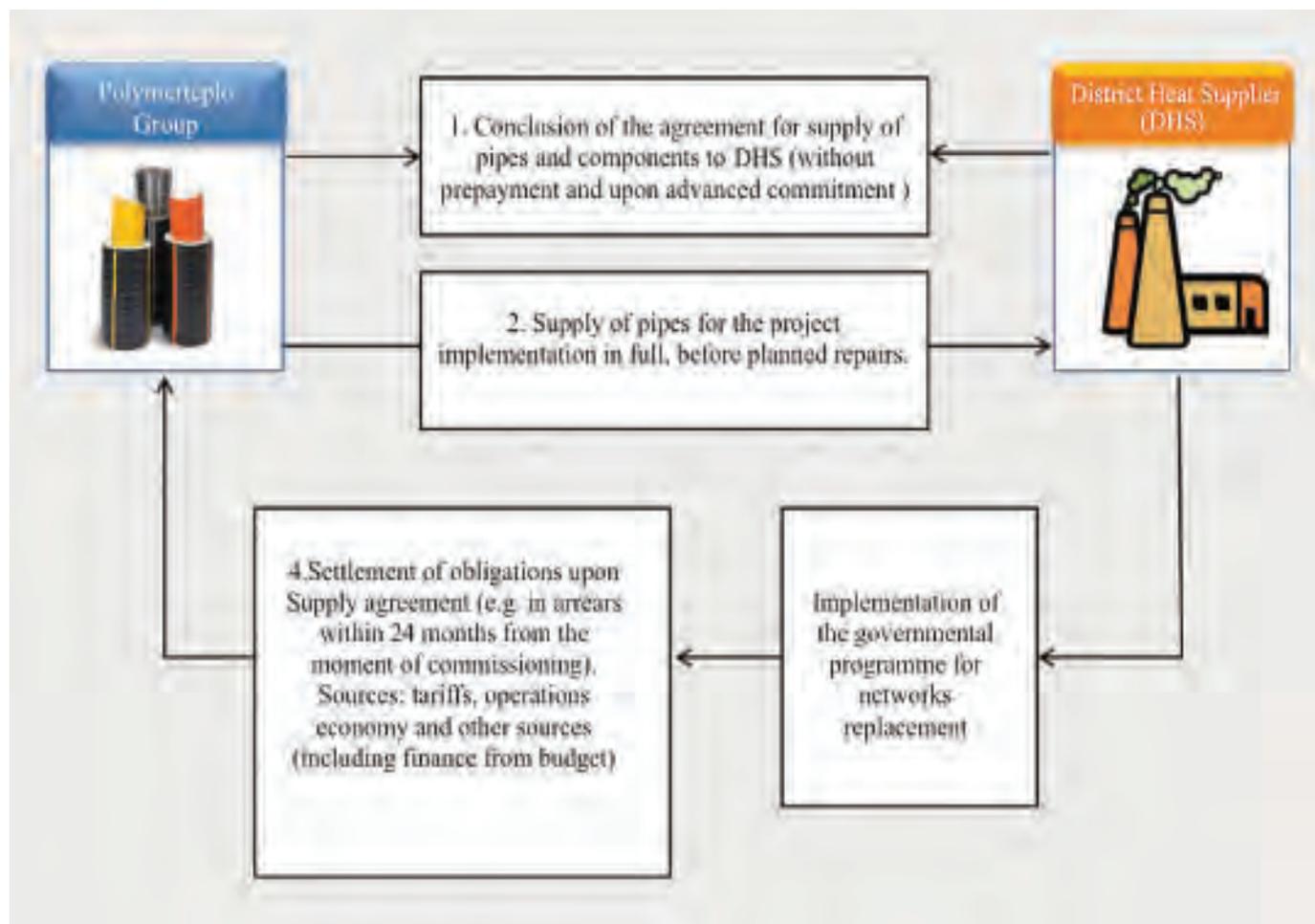
POLYMERTEPLO Group has a successfully implemented model of public-private partnership for utility infrastructure renovation (pic. 7).

This scheme has been used by POLYMERTEPLO Group (the largest in the world manufacturer of high temperature plastic pipelines for heating and hot water supply) for pilot projects in 15 cities, towns and rural settlements in Russia. This demonstrates that demand exists for this type of financing scheme and the willingness of the market to accept it. Our own implementation experience of such programs shows that operating savings can be the source of credit repayment as a result of large-scale renovation. We prove that there is no need for changes of legislation as there are enough opportunities to achieve practical results.

Long-term financing (or partial investment in the initial stages) gives the Government a full range of tools to create a balanced policy that is in the interests of all participants within the utility sector. On one hand, it creates an economic mechanism to stop tariff

**Pic. 6. Model of public-private partnership for utility infrastructure renovation**





Pic. 7. Chart of POLYMERTEPLO Group's investment in renovation of networks

risers (by increasing the terms of credit repayment and reducing interest payments). On the other hand, it keeps administrative track of profitability (using tariffs) and credit repayment (through local and regional financing).

The Government finance operator will also have a number of requirements of borrowers. This will help to increase business practice standards of the utility companies (business planning, information disclosure on tariffs formation, cost reduction measures etc.). Prompt repayment by utility companies of Government credits at the first stage of a pilot project will attract more lenders into the financial market.

One of the main effects of the transition to a new economic structure is that it will encourage utility companies to adopt new engineering capabilities. Borrowers will have to achieve cost reductions in the long-term due to the limitation on tariff increases. This means that they will have to deploy the most advanced energy and resource saving technologies.

However, it is necessary to design and implement technological policy in the construction, modernization and operation of utility networks to ensure protection from accidents and that all modern standards and requirements are met.

This can be done by passing appropriate standard regulations at government level. It can also be done by creating a limited number of self-regulatory companies with the right to issue compulsory regulations for all market participants. Both options have pros and cons and it is hard to establish which of the options is better. That is why they should be implemented at once and corrected as they go to avoid conflict.

We have to acknowledge that in the current situation, tough technical requirements for equipment and materials used for the renovation of utility networks can't be considered as restricting competition. This is similar to maintenance regulation for aircraft. You wouldn't accept an aircraft repair from a company offered dodgy fuel at a cheaper price or someone who installed old analog devices instead of latest electronics.

On one hand, it is obvious that the entrenched lobbyists will try to enforce old methods. But on the other hand, we are faced with the enormous task of implementing modern innovative materials and equipment into pipeline infrastructure.

There is no other way of solving this system crisis.