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ECONOMIC COMMISSION FOR EUROPE

COMMITTEE ON SUSTAINABLE ENERGY

Working Party on Gas

Ad Hoc Group of Experts on the Supply and Use of Gas

Ninth session

Geneva, 24 January 2008

Item 7 of the provisional agenda

**GAS SAVING TO REDUCE NATURAL GAS DEMAND
AND ENHANCE ENERGY SECURITY**

Note by the secretariat

1. The Working Party on Gas at its seventh session and the Ad Hoc Group of Experts on the Supply and Use of Gas at its eighth session, both held in Geneva in January 2007, decided to launch a new project on Gas Saving to Reduce Natural Gas Demand and Enhance Energy Security (ECE/ENERGY/WP.3/2007/2, para. 19(b) and ECE/ENERGY/WP.3/GE.5/2007/2, para. 9(a)) and welcomed a proposal by the PROMGAZ Institute of GAZPROM (Russian Federation) to prepare a draft questionnaire on the topic.
2. On 27 March 2007 at the invitation of PROMGAZ a meeting was held in Moscow to discuss the draft questionnaire. Experts representing gas companies of France, the Netherlands, the Russian Federation and Ukraine, together with the UNECE secretariat worked out a revised version of the draft questionnaire, which was later sent for comments to the Bureau of the Ad Hoc Group of Experts
3. The questionnaire below includes all proposals and changes received by the secretariat from experts concerned.

4. You are kindly requested to complete the questionnaire and send it to the General Rapporteur Mr. Mr. Alexander Karasevich, Director General, OAO Promgaz, 6, ul. Nametkina, 117420 Moscow, Russian Federation (Fax: +7 495 504 4370 and e-mail: a.karasevich@promgaz.ru), with a copy to the secretariat, before 30 November 2007.

1. General information

1.1. Country:

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1.2. Company name, area of activities:

1.3. Contact person:

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2. Energy consumption and energy industry outlook

2.1. Structure of electric power consumption in your country for the last 6 years, bln kWh:

	2001	2002	2003	2004	2005	2006
Industry and Agriculture						
Residential sector						
Commercial and public sector (hospitals, schools, office buildings, etc.)						
Other consumers						
Own use (including losses)						
Total						

2.2. Structure of gas consumption in your country for the last 6 years, bln m³:

	2001	2002	2003	2004	2005	2006
Industry and Agriculture						
Residential sector						
Commercial and public sector (hospitals, schools, office buildings, etc.)						
Energy industry:						
- Electricity production						
- Heat production						
Other consumers						
Own use (including losses)						

	2001	2002	2003	2004	2005	2006
Transport (Natural Gas Vehicles)						
Total						

2.3. Expected increase in national gas consumption by 2020 and 2030, in percentage
(2006 = 100%):

	2020	2030
Industry and Agriculture		
Residential sector		
Commercial and public sector (hospitals, schools, office buildings, etc.)		
Electric power industry		
Other consumers		
Own use (including losses)		
Transport (Natural Gas Vehicles)		

2.4. Major factors effecting gas industry development in your country:

	Rank	Existing and potential effects		
		Strong	Moderate	Low
Changing prices for various fuel types (heavy fuel oil, gasoil etc.)				
Strengthening of environmental legislation and requirements				
Requirements for stable and secure gas supply				
Market liberalization				
Governmental policy for the energy sector				
Energy conservation measures introduced by energy consumers, including tax				
Other (please specify):				

3. Energy efficiency and energy saving

3.1. National economy energy intensity, Kg of Oil Equivalent / 1000 Euros of GPD (the formula is the following: gross energy consumption in kg of oil equivalent divided by total volume of the country's GDP in Euros):

2001	2002	2003	2004	2005	2006

3.2. Percent decrease of energy intensity for your country's economy:

In 1996-2006 national economy energy intensity decreased by ____ %.

3.3. Please rank the main factors responsible for energy intensity reduction in your country:

Oil crises of the 1970s	
Public promotion of energy conservation policies	
High rate of fuel and electricity tariffs and prices growth	
State programmes aimed at reduction of energy intensity of economy, including tax policies	
Role of the final energy supplying companies, performance contracting	
Introduction of modern equipment and new energy saving technologies	
Environmental concerns of society	
Other (please specify)	

3.4. Electricity cutoffs (black-outs)¹ in your country and their impact on energy consumption and energy conservation:

Year	Cutoffs scale	Impact on energy consumption and conservation

3.5. Rank the most efficient energy conservation/saving measures performed in your country (5 = highest rank, 1 = lowest rank):

	1	2	3	4	5
Laws inducing enhanced energy efficiency and saving (technical standards by law)					
Governmental programmes targeting reduction of economy's energy intensity					
Tax policy					
Modernization of equipment and introduction of new more efficient resource and energy saving technologies (for economic reasons)					
High tariffs or market prices for fuel and electricity					
Strong competition between producers of energy intensive products					
Companies' own policies aimed at efficient energy consumption					
Public concerns regarding the efficiency of energy use					
Specialized finance (subsidized loans) for the implementation of energy saving measures					

¹ A cutoff of electrical power, especially as a result of a shortage, a mechanical failure, or overuse by consumers.

	1	2	3	4	5
State control over energy consumption					
Introduction and extension of energy saving standards and labels for household equipment and appliances					
Financial disincentives for overuse of energy, contract conditions between energy consumer and supplier					

Other:

3.6. Structure of average gas consumer prices (tariffs) based on the year 2006:

	Gas price for an average residential consumer (assuming average annual gas consumption at 80 GJ)	Gas price for small scale industrial consumer (annual gas consumption up to 41 000 GJ)	Gas price for large industrial consumer (annual gas consumption over 41 000 GJ)
Share of fuel cost, %			
Share of transportation cost, including losses, %			
Share of distribution cost, including losses, %			
Environment or energy taxes (please specify), %:			
VAT, %			
Other, %			
Total	100%	100%	100%

3.7. Structure of average electricity consumer prices (tariffs) based on the year 2006:

	Average Electricity price for residential consumers	Average electricity price for small industrial consumers (up to 10,000 MWh/a)	Average electricity price for large industrial consumers (over 10,000 MWh/a)
Share of fuel cost, %			
Share of transportation cost, including losses, %			
Share of distribution cost, including losses, %			

	Average Electricity price for residential consumers	Average electricity price for small industrial consumers (up to 10,000 MWh/a)	Average electricity price for large industrial consumers (over 10,000 MWh/a)
Environment or energy taxes (please specify), %:			
VAT, %			
Other, %			
Total	100%	100%	100%

3.8. Consumer demand for ESCO² (Energy Service Companies) services in your country:

	Great demand	Moderate demand	Insignificant demand or no demand at all (specify why)
Industrial energy consumers			
Residential energy consumers			

3.9. Major mode of ESCOs operation in your country:

Performance contracting	
Success fee after project implementation	
Direct contract between an energy consumer and ESCO	
Directives to large energy consumers for use of ESCO services by official bodies regulating energy consumption	
Financial support to ESCO companies by large energy suppliers	
Other (please specify):	

3.10. Financing of energy efficiency and renewable energy projects:

Finance source	Name of organization	Conditions for granting finance for energy efficiency projects	Requirements for minimum pay-back period for energy efficiency projects, years
International financial institutions (World bank, EBRD, etc.)			
Private banks			

² An ESCO company is a consultancy group that provides services to energy consumers to implement measures which reduce energy consumption and costs in a technically and financially viable manner. It could also be a distribution company.

Finance source	Name of organization	Conditions for granting finance for energy efficiency projects	Requirements for minimum pay-back period for energy efficiency projects, years
State organizations and programmes			
Investment and venture funds			
Financing through performance contracting			
Other (please specify):			

3.11. Major energy conservation measures and their contribution to the energy saving

	Current situation	Expected results	
		by 2020	by 2030
Use of mini- and micro-cogeneration systems (capacity below 3 MW)			
Use of secondary energy (waste energy)			
Use of heat pumps			
Use of biofuel for electricity and heat production			
Use of wind for electricity generation			
Use of solar energy for electricity and heat generation			
Use of fuel cells			
Use of combined-cycle gas turbines			

Other:

4. Technology and equipment

4.1. Average depreciation of equipment in industry and power sectors, in %:

Average <u>absolute percentage</u> of depreciation of the technical value (“physical depreciation”) <u>in 2006</u> of:	all industrial equipment	
	main power and heat energy equipment	
Average current <u>yearly percentage</u> of depreciation of the technical value (“physical depreciation”) of:	all industrial equipment	
	main power and heat energy equipment	

4.2. Share of energy in the total cost price of production by major energy consuming industries, %:

Industry	Share of energy in the total cost of production, %	Industry	Share of energy in the total cost of production, %
Machine-building and metal working		Chemical, including gas- and petro-chemistry	
Non-ferrous metallurgy		Glass industry	
Ferrous metallurgy		Food industry	
Industry of building materials and fire-proof (refractory) materials		Timber and pulp and paper industry	
Other			

4.3. List and rank the most efficient technological measures in terms of energy saving introduced in the Industrial sector of your country:

Technological measures	Rank
Introduction of energy conservation standards for equipment	
Installation of measuring equipment	
Optimization of work of heating and air conditioning systems and replacement of old heating equipment with new equipment	
Optimization of work of industrial burners	
Optimization of production process	
Improved insulation of buildings	
Installation of independent co-generation energy sources	
Introduction of variable-frequency drives	
Use of waste energy	
Other (please specify):	

4.4. List and rank the main technological measures implemented in your country that have led to the highest savings of energy consumed by the residential sector:

Technological measures	Rank
Improved insulation of buildings	
Installation of measuring equipment	
Use of individual energy supply and heating sources	
Optimization of work of heating and air conditioning systems and replacement of old heating equipment with new equipment	
Installation of heat pumps	
Installation of energy efficient light systems in buildings	
Introduction of energy conservation standards for building and construction	
Introduction of energy management systems for buildings	
Other (please specify):	

4.5. Current R&D in the field of new and emerging energy saving technologies:

Major R&D directions	Major organizations carrying out R&D research (please name)	Brief description/aims of developing technologies (where possible)
1. Solar energy	...	
2. Wind power	...	
3. Biofuel	...	
4. Natural gas		
5. Industrial burners		
6. Heat pumps		
7. Fuel cells		
8. Insulation materials		
9. Micro cogeneration units		
10. Waste energy		
11. Other (please specify):		

5. Regulatory and legal framework

5.1. Are the energy and gas sectors in your country regulated by the State?

Yes for energy sector Yes for gas sector No for energy sector No for gas sector

5.2. Does the market influence the development of the energy and gas industry in your country?

Yes No

Illustrate the role of the State on the development of energy and gas market in your country.

- 1
- 2
- 3
-

5.3. Please indicate State energy regulatory policies and legal Acts providing for State regulation of the energy sector, if any:

- 1
- 2
- 3
-

** please mention where to access the appropriate documents (e.g.: the website address or name of media where the documents are published, or the name of a library where they could be in storage) if possible:*

5.4. Major State energy programmes or strategies existing in your country:

Are there any State energy strategies or energy programmes introduced by the Government in your country?

Yes No

5.3. Major energy policy priorities as defined by the State energy strategy or programmes:

	Targets set by State programmes/strategies:
Energy conservation	
New and renewable energy sources	
Nuclear energy	
Consumption of natural gas	
Consumption of oil and oil products	
Consumption of coal	
Conventional energy policies	
Security of energy supply	

** please mention where to access the corresponding documents (eg: the address of the website or name of the media where the documents are published, or the name of a library where they could be in storage) if possible:*

6. Obstacles and barriers to enhanced energy conservation

6.1. Please mention the main barriers hindering the increase of energy conservation in your country and possible ways to eliminate such:

Barrier	Way to eliminate

7. Examples of the most efficient energy saving projects implemented in your country

7.1. List the most successful projects in the field of energy efficiency and rational use of energy resources in your country:

Name	Brief description	Achieved result

7.2. Examples of the most efficient projects in the field of use of renewable energy in your country:

Name	Brief description	Achieved result

8. Given the volatility of oil (and gas) prices and based on the experience of your economy's behaviour in the past, which would be most probable scenario for industry response in the case of a high rise of oil/gas prices:

- A – Pay more and calculate the extra cost through the final product cost;
- B – Execute an energy saving project so as to keep the energy bill under control;
- C – Switch the production process to alternative fuel(s) such as coal, electricity, nuclear etc.;
- D – Close down the business and move it to less labour cost places.
