



## NATURAL GAS – RESOURCE POTENTIAL: EXPERIENCE OF RUSSIA

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### NGIO-2030 STUDY ON GAS RESOURCES:

“Natural gas is an abundant fuel. In addition to extensive conventional gas reserves, technological developments for exploiting unconventional gas are raising further the prospect of commercially viable gas resources”.

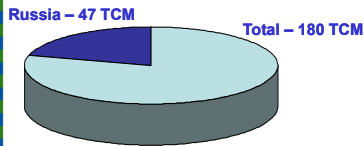
“Unlike oil, gas resource potential is not a concern on a global basis”.

“Arctic regions, especially in Russia, close to largest traditional gas markets, present opportunities for sustainable gas supply for decades”.

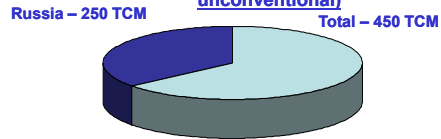


### NATURAL GAS RESOURCES ARE HUGE

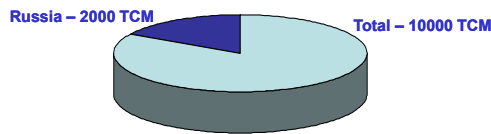
#### Proved global conventional reserves



#### Undiscovered global conventional resources (partly including unconventional)



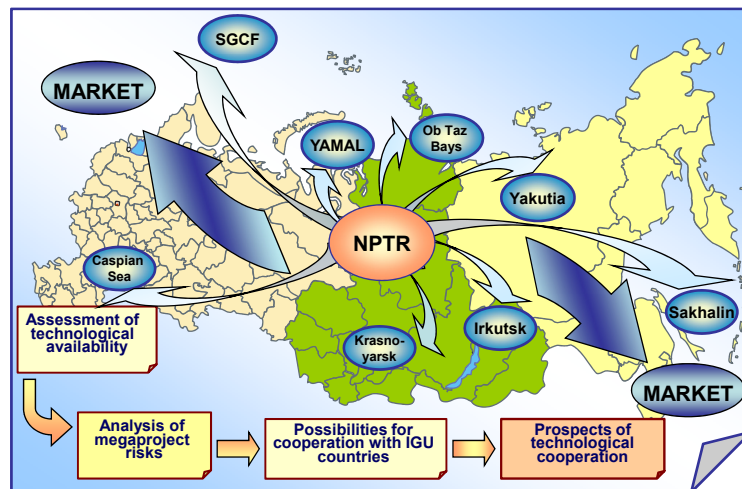
#### Global unconventional resources (mainly gas hydrates)



Unlike oil, global gas industry has far sufficient resources for hundreds of years. Russia alone with its proved reserves is able to satisfy global demand for long period. Development of hard-to-recover and unconventional resources offers endless power supply possibilities. However, there is a need for new production technologies, first of all for remote and deep water fields, hard-to-recover and unconventional resources.



### RUSSIAN GAS INDUSTRY: DEVELOPMENT PROSPECTS





## FUTURE RUSSIAN PROJECTS TILL 2030 (GAS RESERVES UP TO 20 TCM). MAIN IMPLEMENTATION CHALLENGES, WHICH REQUIRE INNOVATIVE SOLUTIONS

### Shtokman gas condensate field

- ◆ **Challenges:** complex hydrographical and climatic conditions, long distance from shore
- ◆ Necessity for LNG chain technologies

### Bovanenkovo gas condensate field

- ◆ **Challenges:** complex geocryological and environmental conditions,
- ◆ Necessity for gas production, transmission and processing technologies

### Sakhalin offshore

- ◆ **Challenges:** deep waters, scattered fields
- ◆ Necessity for LNG chain technologies

### Fields of the Kara Sea shelf

- ◆ **Challenges:** shallow waters, complex ice and geocryological conditions, scattered fields
- ◆ Necessity for technologies – LNG chain and gas processing

### East Siberian fields

- ◆ **Challenges:** remote hard-to-access area, complex geological structures, geocryological and environmental conditions, scattered fields of different size
- ◆ Necessity for technologies – helium extraction, gas chemistry

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## POSSIBLE TYPES OF INTERNATIONAL SCIENTIFIC AND TECHNICAL COOPERATION (RUSSIAN VIEW)

### 1. Joint investigations, development of joint technologies

### 2. Mutually beneficial exchange:

- ◆ Technology – technology
- ◆ Technology – work experience under new conditions
- ◆ Technology – share of profits
- ◆ Technology – marketing image support

### 3. Training of skilled scientists and engineers on a mutual basis

### 4. Joint development of new prospects upon exchange of technological assets

### 5. Working out general concept of the global gas industry development

*Application of new technologies will ensure sustainable and effective development of the global power industry in XXI century due to natural gas*

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24<sup>th</sup> World Gas Conference  
ARGENTINA | 2009  
5-9 October

The Global Energy Challenge:  
Reviewing the Strategies  
for Natural Gas

THANK YOU