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КОНФЕРЕНЦИЯ ВЫСОКОГО УРОВНЯ  
СОТРУДНИЧЕСТВО ЕС В ЭНЕРГЕТИЧЕСКОЙ  
СФЕРЕ СО СТРАНАМИ ВОСТОЧНОГО  
ПАРТНЕРСТВА И ЦЕНТРАЛЬНОЙ АЗИИ

20-летие Программы INOGATE и подготовка к новому этапу



# EU gas standards - Modernisation of gas infrastructure

**National Joint Stock Company "Naftogaz of Ukraine"**

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**Breakout session 5: Gas infrastructure and standards**

# National Joint Stock Company "Naftogaz of Ukraine" is a vertically integrated group of companies, which includes gas and oil business from extraction to the sale to consumers

- **PJSC Ukrtransgaz**
  - ✓ Operates the Ukrainian gas transportation system with the input capacity of 287.7 billion m<sup>3</sup> / year, and output capacity of 178 billion m<sup>3</sup> / year, and in the direction of European countries - 151.4 billion m<sup>3</sup> / year. The volume of gas transit to Europe afor 2014 mounted to 62.2 billion m<sup>3</sup>, in 2015 - 67.1 billion m<sup>3</sup>.
  - ✓ Manages a complex of 12 underground gas storage facilities with overall active volume of about 31 billion m<sup>3</sup> and a daily pumping capacity of up to 280 billion m<sup>3</sup> .
  - ✓ Manages gas pipelines with total length of 38.55 thousand km, incl. main gas pipelines of 22.16 thousand km.
  
- **PJSC Ukrgazdobycha**
  - ✓ Is a powerful natural gas production company. In 2014 the total volume of natural gas production amounted to 14.0 billion m<sup>3</sup>, in 2015 – to 14.528 billion m<sup>3</sup>
  
- **PJSC Ukrtransneft**
  - ✓ Operates a system of main oil pipelines with total length of 3506.6 km, with input capacity of 114 million tons / year, output capacity - 56.3 million tons / year.
  - ✓ Tank farms with nominal capacity of 1083 thousand m<sup>3</sup>.
  - ✓ Offshore oil terminal "Southern" OOT with the capacity of 14.5 million t / year, with the possibility of expansion up to 45 million tons / year... Deadweight of tankers is up to 150 thousand t with maximum draft of 13.8 m. The capacity of the tank farm is 200 thousand m<sup>3</sup>.
  - ✓ In 2014, the pipelines 16 860.1 thousand t of oil were transported, including 15 012.6 thousand t in transit through the territory of Ukraine to refineries in Central Europe and 1 847.5 t of oil to domestic refineries in Ukraine.
  
- **Other enterprises**
  - are engaged in production of oil, gas, gas condensate, as well as processing, distribution activities.

**Naftogaz of Ukraine is one of the largest employers in Ukraine. The enterprises that are part of the Company's group employ over 80 thousand staff, and together with those working in the regional gas distribution companies, where the NJSC holds a minority interest - more than 100 thousand people.**

# Legislative Provision

- ❑ The existing regulatory framework of the former Soviet Union was unable to fully meet the requirements of international and European standards for reliable operation and improvement of the ecological situation in the industry, efficient use of energy resources, reducing all sorts of risks associated with the emergency modes.
- ❑ Sufficiently quick resolution at the legislative level, in view of the law EU, of issues related to the production's environmental impact, reduced consumption of energy resources and ensuring the implementation of energy-saving technologies allowed group of companies "Naftogaz of Ukraine" to meet these advanced requirements.



## Challenges facing Naftogaz of Ukraine group of companies

- ensuring technically reliable performance and environmentally acceptable level of impact on the environment;
- improving the security of supply of hydrocarbon products;
- cost-effective functioning of energy supply systems;
- efficient use of energy resources;
- attracting investments;
- creating and developing competition in the gas market, as well as ensuring social stability in the country;
- the state's ability to shape and implement a policy of protecting national interests, regardless of the existing internal and external threats in the energy sector.

## **Implementation of the INOGATE Technical Secretariat project - "Implementation of the "Action Plan for the harmonisation of standards and codes in the gas and electricity sectors in Ukraine" (CWP05UA)**

- **enabled Ukraine, in general, and the Company, in particular, to fulfill the obligations on the introduction of the regulatory framework of the European Community**

### **The project implementation, in particular, provided a clear definition of:**

- **the strategic goal**  **creating conditions for adoption, implementation and application of advanced European and international standards in the INOGATE Partner Countries**
- **stages** 
  - ✓ determine the minimum number of functional priority standards that need to be adopted to achieve these goals, and their study;
  - ✓ determine a set of European, international and other standards that are used as a reference in priority functional European gas standards and to assist in the translation of these standards
  - ✓ adopt functional priority standards, define the method and procedure
  - ✓ provide support on modernisation of national standardisation and technical regulation system (for access to the international standards, membership in international (regional) standardisation organisations, promote the establishment of technical committees mirroring the international or regional ones)



➤ **ways of implementing** 

- ✓ assist in translating the standards' most recent versions;
- ✓ assistance in ensuring the implementation of standards in Ukraine;
- ✓ conduct seminars and workshops to study the standards and best practices of their implementation;
- ✓ arranging meetings with the European gas transport companies to study their experience in the use of standards (European, national, international, German, and Austrian associations of gas and water experts, Companies' codes of common practice);
- ✓ acquisition and translating the standards of the German Union of Gas and Water experts DVGW.

# The result of cooperation

Standards were prepared in the framework of the INOGATE project with participation experts PJSC "Ukrtransgaz", NJSC "Naftogaz of Ukraine" and TC 133 "Natural gas", TC 146 "Materials, technologies, equipment and structures in oil and gas industry" and TC 19 "Scientific and technical terminology", which is a mirror for ISO/TC 37 "Terminology and language and content resources", and put into action by Order of Ministry of Economic Development of Ukraine 28.07.2014 № 886

- **DSTU GOST EN 1918-1:2014** Gas supply systems. Underground gas storage. Part 1. Functional recommendations for storage in aquifers (ГОСТ EN 1918-1-2012, IDT; EN 1918-1:1998, IDT)
- **DSTU GOST EN 1918-2:2014** Gas supply systems. Underground gas storage. Part 2. Functional recommendations for storage in oil and gas fields (ГОСТ EN 1918-2-2012, IDT; EN 1918-2:1998, IDT)
- **DSTU GOST EN 1918-3:2014** Gas supply systems. Underground gas storage. Part 3. Functional recommendations for storage in solution-mined salt cavities (ГОСТ EN 1918-3-2012, IDT; EN 1918-3:1998, IDT)
- **DSTU GOST EN 1918-5:2014** Gas supply systems. Underground gas storage. Part 5. Functional recommendations for surface facilities (ГОСТ EN 1918-5-2012, IDT; EN 1918-5:1998, IDT)
- **DSTU GOST EN 437:2014** Test gases - Test pressures - Appliance categories (ГОСТ EN 437-2012, IDT; EN 437:2003, IDT)



- **DSTU EN 1776** Gas supply systems. Natural gas measuring stations. Functional requirements (EN 1776:1998, IDT)
- **DSTU EN 12186** Gas supply systems. Gas pressure regulating stations for transmission and distribution. Functional requirements (EN 12186:2000, IDT; EN 12186:2000/A1:2005, IDT)
- **DSTU EN 14161** Petroleum and natural gas industries. Pipeline transportation systems (EN 14161:2011, IDT)
- **DSTU ISO 17089-1** Measurement of fluid flow in closed conduits - Ultrasonic meters for gas -- Part 1: Meters for custody transfer and allocation measurement (ISO 17089-1:2010, IDT)

**At the same time the INOGATE project in Ukraine is simultaneously cancelling conflicting national standards, in particular interstate standards (GOST), developed prior to 1992.**

**To date, orders of the National Standardization Body have cancelled in 2016-2018 more than 12 thousand GOST standards and more than 2 thousand DSTU standards, which are identical to those GOST standards**

**Today the work on the implementation of the INOGATE project (CWP05UA) is completed and there are all prerequisites to adopt as national standards:**

- **EN 12186:2014** Gas infrastructure - Gas pressure regulating stations for transmission and distribution - Functional requirements
- **EN 12327:2012** Gas infrastructure - Pressure testing, commissioning and decommissioning procedures - Functional requirements
- **EN 12583:2014** Gas Infrastructure - Compressor stations - Functional requirements
- **EN 12732:2013+A1:2014** Gas infrastructure - Welding steel pipework - Functional requirements
- **EN 1594:2013** Gas infrastructure - Pipelines for maximum operating pressure over 16 bar - Functional requirements
- **EN 16348:2013** Gas infrastructure - Safety Management System (SMS) for gas transmission infrastructure and Pipeline Integrity Management System (PIMS) for gas transmission pipelines - Functional requirements
- **EN 1776:2015** Gas infrastructure - Gas measuring systems - Functional requirements



## Law of Ukraine "On the natural gas market" (Art. 8):

- ✓ Technical rules and safety standards must be objectively necessary, non-discriminatory and ensure trouble-free and uninterrupted operation of gas transmission and distribution systems, storage facilities, LNG installations
- ✓ The central executive body responsible for creation and implementation of the state policy in oil and gas sector, contributes to the implementation of technical regulations and EU safety standards



- **DSTU GOST CEN/TS 15173:2013** "Pipeline Integrity Management System (PIMS). Fundamentals"
- **EN 16348:2013** Gas infrastructure - Safety Management System (SMS) for gas transmission infrastructure and Pipeline Integrity Management System (PIMS) for gas transmission pipelines - Functional requirements



two draft regulatory acts have been developed:

- **Technical criteria of security of the gas transportation system**
- **Technical criteria for the security of gas storage facilities**

which are expected to be approved in the prescribed manner in 2016

# ВЫВОДЫ

**Knowledge that experts received as a result of the project implementation and studying the introduction of best practices of EU companies in achieving safety and security in the oil and gas supply, reducing the impact on the environment, motivate "Naftogaz of Ukraine" group of companies**

- continue work on further adoption of gas standards, reference standards and their implementation**
- ensure organised updating of enterprises' funds with the most essential national standards, harmonised with ISO and EN standards**
- accelerate the introduction of international and regional standards recognized in the world market, create evidence demonstrating compliance with technical regulations**

**Considering all the above, the group of companies and the National Joint Stock Company "Naftogaz of Ukraine" is looking forward to a positive decision of the European Community to implement the expanded project of introduction in Ukraine of international and European standards and codes of practice that oil and gas companies in Ukraine urgently need today.**

THANK YOU FOR YOUR  
ATTENTION!

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