

**ACTIVITY COMPLETION REPORT**

**Assistance with the implementation of the “Action Plan on Harmonisation of Standards and Codes in Electricity and Gas Sectors of Georgia. Workshop on accessibility and implementation of international technical regulations and standards in the oil and gas sectors**

**(CWP.03.GE and CWP.04.GE)**

**INOGATE Technical Secretariat and Integrated Programme in support of the Baku Initiative and the Eastern Partnership energy objectives**

**Contract No 2011/278827**

A project within the INOGATE Programme

**Implemented by:**

Ramboll Denmark A/S (lead partner)  
EIR Global sprl.  
The British Standards Institution  
LDK Consultants S.A.  
MVV decon GmbH  
ICF International  
Statistics Denmark  
Energy Institute Hrvoje Požar

<b>Document title</b>	Assistance with the implementation of the “Action Plan on Harmonisation of Standards and Codes in Electricity and Gas Sectors of Georgia. Workshop on accessibility and implementation of international technical regulations and standards in the oil and gas sectors (CWP.03.GE and CWP.04.GE)
<b>Document status</b>	Draft

	<b>Name</b>	<b>Date</b>
<b>Prepared by</b>	Dr.Viktor Petrenko	21.03.2016/31.03.2016
	Mr. Ginzburg	23.03.2016
	Mrs. Helen Bekina	27.03.2016
	Mrs. Rusudan Nonikashvili	27.03.2016
<b>Checked by</b>	Nikos Tsakalidis	22.03.2016, 15.04.2016
	Adrian Twomey	
<b>Approved by</b>	Peter Larsen	

This publication has been produced with the assistance of the European Union. The contents of this publication are the sole responsibility of the authors and can in no way be taken to reflect the views of the European Union.

## Table of Contents

1.	PART 1 – EUROPEAN COMMISSION .....	2
1.1.	Background .....	2
1.2.	Essence of the Activity .....	3
1.3.	Key Findings .....	3
1.4.	Ownership and Benefits of the Activity.....	3
1.5.	Recommendations .....	4
1.6.	Challenges Faced.....	5
1.7.	Impact Matrix .....	5
2.	PART 2 - BENEFICIARIES.....	6
2.1.	Executive Summary .....	6
2.2.	Background and objectives.....	6
2.3.	Establishment and work of a Working Network (Working / Learning groups) for the study, adoption, introduction and implementation of the standards used in the European gas infrastructure .....	7
2.4.	Overview of the Workshop.....	8
2.5.	Development of the first draft of the 2016 – 2019 Work Plan of the Georgia Electrotechnical Committee TC 1 (Natural Gas Subcommittee) for the adoption of a minimum set of European and international standards for the effective implementation of priority European gas functional standards	9
2.6.	Main result achieved and Impact.....	9
2.7.	Recommendations from the ITS experts .....	9
2.8.	Challenges faced .....	10
2.9.	Annexes .....	12
2.9.1.	Annex 1: Protocol for small working groups Committee Meeting for the study of EU standards within the framework of the INOGATE programme .....	13
2.9.2.	Annex 2 The first mission report.....	16
2.9.3.	Annex3. Mission report: Dr. Petrenko’s second visit to Georgia as part of the fulfilment of CWP03&04GE.....	21
2.9.4.	Annex 4. Workshop agenda.....	26
2.9.5.	Annex 5 List of participants .....	28
2.9.6.	Annex 6 Answers on most important questions about the European gas functional standards	30
2.9.7.	The first draft of Work Plan of the Georgian Electrotechnical Committee TC 1 (Natural Gas Subcommittee) on 2016 - 2019 for adoption of the minimum set of European and other standards for effective implementation of priority European gas functional standards .....	33
2.9.8.	Annex 8 List of additional priority gas standards recommended for adoption by Georgia in 2016-	



ENERGY COOPERATION BETWEEN THE EU, THE LITTORAL STATES OF THE BLACK & CASPIAN SEAS AND THEIR NEIGHBOURING COUNTRIES

### Abbreviations and acronyms

AA	Association Agreement
BS	British Standard
CEN	European Committee for Standardisation
CENELEC	European Committee for Electrotechnical Standardisation
CWP	Country Work Plan
DCFTA	Deep and Comprehensive Free Trade Area
ECT	Energy Community Treaty
ECS	Energy Community Secretariat
EU	European Union
IEC	International Electrotechnical Commission
ISO	International Organisation for Standardisation
ITS	INO GATE Technical Secretariat
PCs	INO GATE Partner Countries
TCs	Technical Committees
GE	Georgia

## 1. PART 1 – EUROPEAN COMMISSION

### 1.1. Background

<b>Assignment Title:</b>	Assistance with the implementation of the “Action Plan on Harmonisation of Standards and Codes in Electricity and Gas Sectors of Georgia. Workshop on accessibility and implementation of international technical regulations and standards in the oil and gas sectors.” (CWP.03.GE and CWP.04.GE)
<b>Country and Dates:</b>	Georgia, 9 December 2015 - 31 March 2016
<b>Beneficiary Organisation(s):</b>	GOGC (Georgian Oil and Gas Corporation) and the Electrotechnical Technical Committee TC 1(Natural Gas Subcommittee)
<b>Beneficiary Organisation’s key contact persons – name and e-mail address</b>	Mr. Javakhishvili - Technical Committee #1, The Head of the working group on natural gas; Head of Design department of GOGC Email: t.javakhishvili@gogc.ge
<b>Deliverables Produced</b>	<p>CWP03GE (points b and c<sup>1</sup>):</p> <ul style="list-style-type: none"> <li>• An updated list of revised gas standards;</li> <li>• The Road Map for GOGC for the implementation of gas standards;</li> </ul> <p>CWP04GE:</p> <ul style="list-style-type: none"> <li>• A workshop on accessibility and implementation of international technical regulations and standards in the gas sector</li> </ul>
<b>Expert Team Members</b>	<ol style="list-style-type: none"> <li>1. Key expert 2, Nikos Tsakalidis</li> <li>2. Senior Standardisation Expert / Covering Electricity and Gas, Dr Viktor Petrenko</li> <li>3. Senior Gas Industry Expert/ Mr Philip Winnard</li> <li>4. Junior Gas industry and Standardisation Expert/Mr Mykhailo Ginzburg</li> <li>5. Junior Expert/ Ms Helen Bekina</li> <li>6. Junior Expert/Mrs. Rusudan Nonikashvili</li> </ol>

<sup>1</sup> The activity CWP03GE (a) – “Seminar on Electricity standards” - will be covered in a separate ToR to be prepared at later stage and subject to validated demand, results and ownership from the PCs.

## 1.2. Essence of the Activity

The overall objective of this task is to support Georgia in the introduction and implementation of priority European gas standards as identified in the “Road Maps and Action Plan on Harmonisation of Standards and Codes in the Electricity and Gas Sectors of Georgia”, and which are a requirement of the signed EU Association Agreement.

## 1.3. Key Findings

The main findings which have resulted from this activity are the following:

- Results showing the achievements in the field of harmonization of gas standards in Georgia since the start of the CWP 03&04 GE;
- A Small Steering Committee was created to manage the implementation of CWP 03&04 GE and the Working / Learning Group for each of the European gas functional standard selected for implementation;
- A training methodology and materials were developed for the study of each of the seven European gas functional standard selected for implementation;
- Questions from the working / learning groups were identified, processed and summarized by the INOGATE ITS Experts. These questions were then discussed at the final seminar;
- TC 1 and GOGC include European gas functional standards in the National standardization plan of Georgia for 2016 (applicable to the second half of 2016) after receiving assistance from the INOGATE ITS Experts;
- TC 1 and GOGC prepared translations of European gas functional standards, with support from the INOGATE ITS Expert, and were published as reference annexes;
- A small Steering Committee developed and approved “The first draft of Work Plan of the Georgian Electrotechnical Committee TC 1 (Natural Gas Subcommittee) on 2016 -2019 for adoption of the minimum set of European and other standards for effective implementation of priority European gas functional standards”
- A small Steering Committee developed and approved the additional list of priority gas standards to be adopted between 2016 and 2020.

## 1.4. Ownership and Benefits of the Activity

The main benefits of the activity for the Beneficiary are the following:

- 1) Deep understanding by the GOGC and GGTC leading experts of the nature and peculiarities of the application of selected European gas functional standards;
- 2) Deep understanding by the GOGC and GGTC leading experts of the need for a simultaneous adoption and implementation of reference Standards (either normative and informative);
- 3) The first draft of the 2016 -2019 Work Plan of the Georgian Electrotechnical Committee TC 1 (Natural Gas Subcommittee) for the adoption of a minimum set of European and other standards for the effective implementation of priority European gas functional standards, which can also be used as a justification for the development of Terms of Reference for international technical assistance and the inclusion into the National Standardization Plan;
- 4) A positive experience of working on the study, adoption and implementation of the main normative documents with high economic relevance.

## 1.5. Recommendations

The development of the Road Map and Action Plan was an essential first step in moving towards European standardisation in Georgia. In determining the next steps it is necessary to fully understand the current situation in the Georgian gas sector.

Based on the experience gained in this activity, the ITS expert team can recommend:

1. An implementation of new technical assistance projects to continue to support Georgia in the harmonization of standards, with a framework similar to that used in this activity (CWP 03&04GE):
  - a. A workshop with international experts for the group of standards selected for implementation;
  - b. The study of standards in working/learning groups based on the preparatory work for the professional translation of standards;
  - c. Establishing the list of reference standards for the effective implementation of selected Functional standards.
  - d. Withdrawal of national standards, codes of practice and other legal documents which may conflict with European standards, or their alignment.
  - e. A workshop with international experts to discuss any issues raised and the practical application of implemented European and international standards in Georgia;
  - f. Adopting the whole set of standards, including all reference standards (see Annex 7).
  - g. Monitoring the implementation of standards.
2. To conduct regional training workshops (meetings) for technical specialists of PCs to study the experience of implementation and best practices of the use of European and international standards (codes of practice and technical regulations).
3. To conduct appropriate training sessions for top management of companies on European gas functional standards.
4. To establish close contact with CEN / CENELEC by carrying out the following tasks:
  - a. Conduct a training (familiarisation) seminar on the organisation of work of a Technical Committee;
  - b. Familiarisation with the work methods of TCs from the Eastern European countries (including small countries);
  - c. Obtainin recommendations on methodologies from leading international experts in terms of specifying the functions and content of work of the Technical Committees;
  - d. Improve the professional skill of Technical Committee experts within the EU projects.
  - e. Assist in the creation and strengthening of relevant services (standardisation services) in national companies and training of personnel.
5. To conduct work towards the active involvement in the process of harmonisation of standards of national gas companies.
6. To facilitate the launch of a new project in Georgia aimed at implementing the remaining priority standards.



7. Based on the objectives that Georgia has set for itself, it will be necessary to draw up a program for the implementation of standards ensuring:
- a transition to modern methods of monitoring and diagnostics of gas infrastructure;
  - efficient gas extraction;
  - and the development of marine gas infrastructure.

## 1.6. Challenges Faced

The main challenges that have been faced include:

1. Inconsistency in the capabilities of the TC-1 working group on gas regarding new tasks.
2. The lack of systematic methodological assistance to Georgian Standardization Technical Committees. Unlike Moldova and Ukraine, Georgia has no standardization institute.
3. The lack of standardization departments in GOGC and GGTC.
4. High work load of the leading experts at GOGC and GGTC and very tight schedule of the leading experts at GOGC and GGTC.

## 1.7. Impact Matrix

Impact Area	Developments	2015 (%)	Apr 2016 (%)
<b>Policy</b>	<i>Fulfilment of obligations under the AA, DCFTA and ECT (adoption and implementation of the European gas functional standards for main pipelines)</i>	Level of adoption of the last version of European gas functional standards for main pipelines in Georgia – 15%	Level of preparation for adoption of European gas functional standards for main pipelines in Georgia - 100%
<b>Regulation</b>	<i>Gradual adoption and implementation of normative reference standards</i>	36%	up to 100%
<b>Technology</b>	<i>Gradual upgrade and modernisation of some of the Gas infrastructure</i>	0%	75 %, the European gas functional standards for main pipelines are used in the modernisation programme in GE (ongoing)
<b>Other</b>			

## **2. PART 2 - BENEFICIARIES**

### **2.1. Executive Summary**

The lack of harmonisation of standards and best practices in the gas sector are major obstacles to the convergence of energy markets between the EU and Georgia. INOGATE has supported Georgia to move from the old Soviet approach based on GOST standards, to a new dual system of technical legislation supported by voluntary standards, aimed at the greater convergence of gas sectors, the harmonisation of technical standards, the enhancement of gas cross border cooperation and an improvement of efficiency, security and reliability of gas supply infrastructure with a focus on main transit gas pipelines.

The results of the work done allowed Georgia to:

- Begin the process of adoption and simultaneous implementation of the most updated version of the gas functional standards for maximum operating pressure over 16 bar. Next step is to adapt company standards and / or adopt new company and/or industry standards in line with the European adopted standards;
- Gain experience on an intensive study of standards that can be widely used; The developed program of reference standards for adoption not only ensures the effective use of the gas functional standards for main gas pipelines, but is the first step in the adoption and implementation of functional standards for medium-pressure gas pipelines.
- The established Working Network (Working/Learning Groups) can provide the study and adoption of the remaining CEN/TC 234 functional standards in the next few years, with appropriate international assistance.

### **2.2. Background and objectives**

As part of the activities under the Activity on Standards, part of the Sub-Component B2 Electricity and Gas of the ITS project, a team of ITS experts has developed a Road Map and Action Plan on the harmonisation of standards and codes in the electricity and gas sectors for Georgia and other INOGATE Partner Countries. These technical documents provide a tailored analysis of each country's standardisation system and details and the steps that should be taken to approximate their system to the one used in EU Member States.

Georgia created a standardization Technical Committee in the electrotechnical field. TC 1-Electrotechnical Committee has:

- A working group in the electrotechnical field;
- A working group in the field of gas;
- 17 members in total.

Georgia adopted all priority gas standards through the endorsement method. Georgia's plan for the standardization field is to:

- Increase the efficiency and operability of TCs – undertaking an analysis to identify an appropriate online system for the effective functioning of the Standardisation TCs and the development of technical specifications;
- Update of standardization Technical Committees members;
- Discussion with TC 1 members to create a TC in gas;
- Improve and modernize procedures and techniques for the preparation of a standards registry - Develop a study to identify appropriate systems for the effective production of a standards registry and the development of relevant technical specifications;

### **2.3. Establishment and work of a Working Network (Working / Learning groups) for the study, adoption, introduction and implementation of the standards used in the European gas infrastructure**

A small Steering Committee was set up to implement this task and to follow-up on results and impacts achieved. Further information is included in Annex 1: Protocol Small working groups Committee Meeting for studies of the EU standards within the framework of INOGATE programme. The topics covered in this meeting included:

1. The election of the head of the Small Management committee.
2. The composition and leadership of working groups.

The second day of the first mission coincided with establishment session of the Working/Learning Groups (See Annex 2: The first mission report). For each standard, an Explanatory Note with Annexes was prepared: Annex 1 is the translation of a standard; Annex2 is a Table for comments. Members of the working group at their meetings prepared summary tables of comments that were discussed with the ITS experts. Based on these comments, a number of discussion questions were formed to be included at the seminar. The second area of work in the Working/Learning Groups was to analyse the normative references and reference standards necessary for the effective implementation of functional standards. Based on the results of the discussion, the first version of The First Draft of the Program for Adoption of the Set of European Gas Functional Standards with Reference Standards was developed.

Dr Viktor Petrenko undertook a mission to Georgia from the 8<sup>th</sup> to the 12<sup>th</sup> of February 2016 to:

- Carry out a meeting of a small Steering Committee “Current situation with adoption and implementation of European gas functional of standards in Georgia”
- Attend a meeting of the Working/learning Group on results of learning EN 1594 and EN 16318;

- Attend a meeting of the Working/learning Group on the results of learning EN 12327;
- Attend a meeting of the Working/learning Group on the results of learning EN 12186 and EN 12583;
- Deliver an overview of European gas functional standards EN 12732;
- Deliver an overview of European gas functional standards EN 1776.

The summary of the activities in chronological order is included in Annex 3.

#### **2.4. Overview of the Workshop**

In this section, we provide the key results and conclusions from the seminar. The complete set of presentations delivered during the Workshop can be downloaded in English and Russian from the INOGATE website: <http://www.inogate.org/activities/612?lang=ra>

The Agenda of Workshop is presented in Annex 5 and the list of participants is presented in Annex 6.

The morning session included 3 presentations from ITS experts and the presentation from Dr Teimuraz Javakhishvili, Head of Design Department GOGC, Coordinator of the Working/ Learning Groups. The afternoon session included a discussion for members of the Working/ Learning Groups and the ITS Senior Gas Standardization Expert Mr Phil Winnard on EN 1594, EN 12327, EN12186, EN1776, moderated by ITS Senior Standardization Expert / Task Leader Dr Viktor Petrenko.

The main questions of this discussion can be found below:

1. In the UK is the Transmission Company private or state owned?
2. Does Northern Ireland use gas? I don't see the distribution system on the map.
3. Do distribution companies operate on 7 Bar or not? Please explain what the pressure in the gas pipeline is.
4. Plastic pipes were mentioned – could you please specify what the maximum pressure in the plastic pipes is? Polyethelic pipes can stand what Bar?
5. Do the plastic pipes have a metal coating?
6. IGM standards are similar to German DVGW standards. Is it connected or not? Are British and German documents the same?
8. As for Georgia – what technical documentations should be easier to use?
9. How do you calculate the micro cycles in the Gas pipeline system if the pipeline is more than 100 km?

Written answers to the most important issues are presented in the Annex 6.

Dr Viktor Petrenko presented the additional list of priority standards for Georgia for 2016 - 2017. This proposal was prepared on the basis of analysing the problems with the implementation of European gas functional standards.

The participants approved the ITS expert's approach and asked to prepare the first draft of the program for adoption of European gas functional standards with reference standards.

## **2.5. Development of the first draft of the 2016 – 2019 Work Plan of the Georgia Electrotechnical Committee TC 1 (Natural Gas Subcommittee) for the adoption of a minimum set of European and international standards for the effective implementation of priority European gas functional standards**

The strategic objective of the program developed (see Annex 7) is the adoption and implementation by GOGC and GGTC of the most updated editions of European functional standards for gas pipelines with a maximum operating pressure over 16 bar.

The list of additional priority gas standards which are recommended for adoption by Georgia in 2016-2020 (Annex 8) was developed in parallel and is included as an additional supplement to the Road Map for Georgia.

## **2.6. Main result achieved and Impact**

Key results and impact achieved are the following:

- Georgia has begun the process of adoption and simultaneous implementation of all the latest editions of the gas functional standards for maximum operating pressure over 16 bar. Next step is to adapt the company standards and / or adopt new company and/or industry standards;
- Georgia has gained experience of an intensive study of standards that can be widely used;
- The developed program for the adoption of reference standards not only ensures the effective use of gas functional standards for gas mains, but is the first step in the adoption and implementation of functional standards for medium-pressure gas pipelines.
- The established Working Network (Working/Learning Groups) can provide the study and adoption of the remaining CEN/TC 234 functional standards in the next few years, supported by the appropriate international assistance.

## **2.7. Recommendations from the ITS experts**

Based on the experience gained this activity ITS experts team can recommend:

1. An implementation of new technical assistance projects to continue to support Georgia in the harmonization of standards, with a framework similar to that used in this activity (CWP 03&04GE):
  - a. A workshop with international experts for the group of standards selected for implementation;

- b. The study of standards in working/learning groups based on the preparatory work for the professional translation of standards;
  - c. Establishing the list of reference standards for the effective implementation of selected Functional standards.
  - d. Withdrawal of national standards, codes of practice and other legal documents which may conflict with European standards, or their alignment.
  - e. A workshop with international experts to discuss any issues raised and the practical application of implemented European and international standards in Georgia;
  - f. Adopting the whole set of standards, including all reference standards (see Annex 7).
  - g. Monitoring the implementation of standards.
2. To conduct regional training workshops (meetings) for technical specialists of PCs to study the experience of implementation and best practices of the use of European and international standards (codes of practice and technical regulations).
3. To conduct appropriate training sessions for top management of companies on European gas functional standards.
4. To establish close contact with CEN / CENELEC by carrying out the following tasks:
  - a. Conduct a training (familiarisation) seminar on the organisation of work of a Technical Committee;
  - b. Familiarisation with the work methods of TCs from the Eastern European countries (including small countries);
  - c. Obtainin recommendations on methodologies from leading international experts in terms of specifying the functions and content of work of the Technical Committees;
  - d. Improve the professional skill of Technical Committee experts within the EU projects.
  - e. Assist in the creation and strengthening of relevant services (standardisation services) in national companies and training of personnel.
5. To conduct work towards the active involvement in the process of harmonisation of standards of national gas companies.
6. To facilitate the launch of a new project in Georgia aimed at implementing the remaining priority standards.
7. Based on the objectives that Georgia has set for itself, it will be necessary to draw up a program for the implementation of standards ensuring:
  - a transition to modern methods of monitoring and diagnostics of gas infrastructure;
  - efficient gas extraction;
  - and the development of marine gas infrastructure.

## **2.8. Challenges faced**

The main challenges that have been faced include:

1. Inconsistency in the capabilities of the TC-1 working group on gas regarding new tasks.

2. The lack of systematic methodological assistance to Georgian Standardization Technical Committees. Unlike Moldova and Ukraine, Georgia has no standardization institute.
3. The lack of standardization departments in GOGC and GGTC.
4. High work load of the leading experts at GOGC and GGTC and very tight schedule of the leading experts at GOGC and GGTC.

## 2.9. Annexes



### **2.9.1. Annex 1: Protocol for small working groups Committee Meeting for the study of EU standards within the framework of the INOGATE programme**

#### Protocol No. 1

Tbilisi 20-21.01.2016

The INOGATE ITS project in delivered an Activity in Georgia (CWP 03 & 04 GE) and began working according to plan on the study and application process of 7 European standards. The ITS experts and stakeholders for the meeting established a management committee for the work delivered and working groups.

A meeting was held between January 20 – 21 at the Georgian Oil and Gas Corporation, and was attended by:

- Nikos Tsakalidisi - INOGATE Deputy Team Leader;
- Viktor Petrenko - expert in the field of standards in electricity and natural gas sectors;
- Rusudan Nonikashvili - project communications expert;
- Nana Pirtskhelani - Ministry of Energy;
- Mr Gochitashvili - Georgian Oil and Gas Corporation;
- Rostom Tsertsvadze - Georgian Gas Transportation Company;
- Mr Javakhishvili - # 1 Technical Committee, the head of the working group on natural gas;
- Mr Tabaghua - of Standardization and Metrology;
- Tsintsadze Suliko - Georgian Oil and Gas Corporation;
- Gabriul Vatavidze - Georgian Oil and Gas Corporation;
- Gia Shashviashvili - Georgian Gas Transportation Company;
- Vladimir Mrevlishvili - Oil and Gas Corporation;
- Temur Thetaguri - Georgian Oil and Gas Corporation;
- Kakhaber Teliashvili - Georgian Oil and Gas Corporation.

The topics covered included:

1. The election of a small Management committee – which discussed the ideas and agreements between the management of a small committee composed of:

1. Mr. Teimuraz Javakhishvili - # 1 Technical Committee, Chairman of the Committee.

2. Anna Teliashvili - Georgian Oil and Gas Corporation (Secretary).
  3. David Sharikadze - the Ministry of Energy.
  4. Mr. Gochitashvili - Georgian Oil and Gas Corporation.
  5. Rostom Tsertsvadze - Georgian Gas Transportation Company.
  6. Mr. Tabaghua - of Standardization and Metrology.
2. The composition and leadership of the working groups – which discussed and decided to combine the opinions of the participants:
- to create 5 working groups to study the standards and working groups as follows:
    - Group # 1**, Standards: 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;
    - Group # 2**, the standard EN 12732: 2013 + A1: 2014 Gas Infrastructure - Welding steel pipework - Functional requirements
    - Group # 3**, the standard EN 12327: 2012 Gas Infrastructure - Pressure testing, commissioning and decommissioning procedures - Functional requirements;
    - Group # 4**, the standard EN 1776: 2015 Gas infrastructure - Gas measuring systems - Functional requirements;
    - Group # 5**, Standards: EN 12186: 2014 Gas infrastructure - Gas pressure regulating stations for transmission and distribution - Functional requirements and EN 12583: 2014 Gas Infrastructure - Compressor stations - Functional requirements.
  - The working groups will be composed of the following composition:
    - Group # 1** Participants:
    - Tsintsadze Suliko - Georgian Oil and Gas Corporation (GOGC) planning and design Service Design Engineer (Team Leader);
    - Vladimir Khetaguri - GOGC Construction Quality Management and Control Division;
    - Kakhaber Teliashvili - GOGC leading specialist planning and design Service Design Engineer;
    - Temur Mrevlishvili - GOGC leading specialist planning and design Service Design Engineer;

Mamuka Losaberidze - Georgian Gas Transportation Company (GGTC) Terdjola Branch;

Gia Shashviashvili - GGTC's main gas exploitation department.

**Group # 2** participants:

Gabriel Vatatidze - GOGC construction quality management and control Service Specialist (Team Leader);

Irakli Erishvili - GGTC's Head of Laboratory;

Rafael Narimanidze - GGTC's flaw.

**Group # 3** participants:

Vladimir Khetaguri- (Team Leader);

Temuri Mrevlishvili;

Ilya Lekiasvili - GGTC construction supervision department.

**Group # 4** participants:

Alexander Ksovreli - GGTC's measurement-control devices and metrology division (team leader);

Revaz Chikashua - GGTC's Information Technology Division.

Kakhaber Teliashvili.

**Group # 5** participants:

Yuri Burduli - GGTC's Kvesheti Branch Director (Team Leader);

Kakhaber Teliashvili;

Temur Mrevlishvili.

Group leaders were provided with explanations of the basic principles how the work has to be constructed. The work of the key provisions of the current operational activities of the small management committee and working groups will be conducted using e-mail.

Chairman: Mr. Javakhishvili

Secretary: Mr. Teliashvili

## 2.9.2. Annex 2 The first mission report

### Mission report

#### Dr Petrenko's visit to Georgia as part of the implementation of CWP 03&04 GE

Dr Viktor Petrenko undertook a mission to Georgia from the 19<sup>th</sup> to the 22<sup>nd</sup> of January 2016 to:

- Carry out a kick-off meeting of a small Steering Committee which was set up in order to monitor the implementation of this task, as well as follow up on results and impacts once the activity is over;
- Support Georgia to set up the Working/learning Groups for EU functional gas standards;
- Present the updated list of existing gas functional standards for translation, including newly introduced EU standards. In this regard determine which of the previously translated gas standards (by INOGATE) need to be updated with new content ;
- Present the result of the normative reference analysis for gas functional standards (pipelines with MOP more 16 bar);
- Attend a pre-session of the Working/learning Groups;
- Deliver an overview of European gas functional standards EN 16348, EN 12327, EN 12168 and EN 12583;

Below is a summary of the activities in chronological order.

#### **Tuesday 19<sup>th</sup> January 2016**

- *Travel to Georgia*

#### **Wednesday 20<sup>th</sup> January 2016**

A kick-off meeting of the small Steering Committee with potential members of the Learning/Working Groups at GOGC.

##### **Participants:**

- Teimuraz Javakhishvili – Head of the committee, Head of Design Unit
- Teimuraz Gochitashvili - Advisor, Head of Strategic Planning Department Georgian Oil and Gas Corporation
- Sulkhan Tabagua – Head of metrology and standardization department
- Rostom Tsetskladze - Engineer at the metrology department, GOGC
- Kakhaber Teliashvili – Head of the underground storage department, GOGC
- Dr.Viktor Petrenko – INOGATE Task Leader CWP 03&04GE
- Mr. Nikos Tsakalidis – INOGATE Deputy Team Leader
- Rusudan Nonikashvili – INOGATE Communication Expert

10:00-  
13:00

##### **Summary:**

1. **Selected the members of the Small Steering Committee for project implementation:**
  - Teimuraz Javakhishvili – Head of the committee, Head of Design Unit
  - Teimuraz Gochitashvili - Advisor, Head of Strategic Planning Department

---

Georgian Oil and Gas Corporation

- Nana Pirtskhelani – INOGATE country coordinator for Georgia
- Sulkhan Tabagua – Head of metrology and standardization department at GEOSTM
- Rostom Tsetskladze – GOGC – Engineer at the metrology department, GOGC
- Kakhaber Teliashvili - Head of the underground storage department, GOGC

The name of the Ministry of Energy representative was determined later, after discussing with the Country Coordinator.

The Head and Secretary of the Small Steering Committee, Mr. Teimuraz Javakhishvili, was elected as a head of the committee.

## **2. INOGATE's presentation about CWP 03&04.**

Dr Petrenko presented the CWP 03&04 GE. The presentation pointed out that the remaining duration of the activity is three months, while the amount of work is quite significant. The project envisages finalising and implementation seven European gas functional standards (EN 12186: 2014, EN 12327: 2012, EN 12583: 2014, EN 12732: 2013 + A1: 2014, EN 1594: 2013, EN 16348: 2013, EN 1776: 2015). Currently there are translations available of the previous versions of the standards that have been done within the INOGATE Project in 2010. A key issue is the clarification of the standards' versions, translation of amendments and new versions. INOGATE experts completed and presented the Explanatory Notes for 5 standards: EN 1594: 2013, EN 16348: 2013, EN 12186: 2014, EN 12327: 2012; EN 12583: 2015. The Explanatory Notes have, as Annexes, the updated translations in line with the current version of the standard.

Because EN 1776: 2015 was published in December 2015, and EN 12732: 2013 + A1: 2014 and EN 1776: 2015 have a significant changes, ITS experts will present the Explanatory Notes for these standards during the next mission.

## **3. Discussion of the updated list of European gas functional standards to be introduced in Georgia**

The members of the Small Steering Committee approved the plan presented. The representative of the Georgian NSB confirmed the obligation to adopt these 7 standards by reprinting method, with the translations as informative annex.

## **4. Setting up learning/working groups in areas of work with standards.**

The Small Steering Committee made the decision to set up five Working/Learning Groups. The Small Steering Committee made the decision to agree the membership of the Working/Learning Groups with the INOGATE Country Coordinator.

---

14.00- 16.30	Pre-session of the Working/learning Groups at GOGC. The first session of the Working/learning Groups: Overview of European gas functional standards EN 16348 and EN 12327
-----------------	--

**Participants:**

---

- 
- Suliko Tsintsadze-Georgian Oil and Gas Corporation. Planning and construction department, engineer
  - Vladimer Khetaguri – GOGC, Head of the quality control department
  - Teimuraz Mrevlishvili – GOGC, Engineer /planner
  - Mamuka Losaberidze- Chief specialist at the planning and constructing department
  - Teimuraz Javakhishvili – Head of the committee, Head of Design Unit
  - Teimuraz Gochitashvili - Advisor, Head of Strategic Planning Department Georgian Oil and Gas Corporation
  - Kakhaber Teliashvili - Head of the underground storage department, GOGC

**Summary:**

1. Dr Petrenko explained the procedure for working with the Explanatory Note.
2. Dr Petrenko focused the members of the Working/learning Groups on the third tasks:
  - Editing the translations;
  - Analysis of Normative reference
  - Preparation of the list of additional standards for the effective implementation of functional standards;
3. Overview of European gas functional standard EN 16348;
4. Overview of European gas functional standard EN 12327.

---

**Thursday 21<sup>th</sup> January 2016**

---

10:00-10:45 The first session of the Working/learning Groups (continuing) at GOGC. Questions on the overview of European gas functional standards EN 16348, EN 12327

**Participants:**

- Gabriel Vatitadze – Chief specialist of the quality control department GOGC
- Erekle Erishvili – Head of the laboratory at the GGTC
- Rafael Narimanidze- GGTC
- Teimuraz Javakhishvili – Head of the committee, Head of Design Unit
- Teimuraz Gochitashvili - Advisor, Head of Strategic Planning Department Georgian Oil and Gas Corporation
- Kakhaber Teliashvili - Head of the underground storage department, GOGC

**Summary:**

The main questions of the participants were :

- Procedure on how to prepare questions
  - What is a Technical Specification (TS)?
  - What is a Technical Report (TR)?
  - Example of additional standards for EN 16348
-

---

10:45 – 11:15 Meeting of the Small Steering Committee with the INOGATE Country Coordinator at GOGC.

**Participants:**

- Nikos Tsakalidis – INOGATE deputy team leader
- Viktor Petrenko- Task Leader CWP 03&04GE
- Nana Pirtskhelani - INOGATE Country Coordinator for Georgia
- Teimuraz Gochitashvili- Advisor, Head of Strategic Planning Department
- Georgian Oil and Gas Corporation
- Teimuraz Javakhishvili – Head of design unit
- Kakhaber Teliashvili - Head of the underground storage department, GOGC

**Summary**

- The INOGATE Country Coordinator proposed Mr. Sharikadze David – Chief of the energy department as member of the Small Steering Committee
- INOGATE Country Coordinator agreed to approve the Working/learning Groups at Ministerial Level

---

11:30- 13:30 The second session of the Working/learning Groups: Overview of European gas functional standards EN 12186: 2014 and EN 12583:2015 at GOGC.

**Participants:**

- Boris Kokashvili - Head of the Measuring /supervising and metrology department at GGTC
- Teimuraz Javakhishvili – Head of the committee, Head of Design Unit
- Teimuraz Gochitashvili - Advisor, Head of Strategic Planning Department Georgian Oil and Gas Corporation
- Kakhaber Teliashvili - Head of the underground storage department, GOGC
- Iuri Burduli – Head of the underground storage department GGTC

**Summary**

- Covered an overview of European gas functional standard EN 12186: 2014. There are significant technical changes between this European Standard and the previous version.
- Covered an overview of European gas functional standard EN 12583:2015. There are significant technical changes between this European Standard and the previous version, mainly in the condition monitoring and diagnostics of machine systems for Compressor Station.

---

14:30-15:15 Planning meeting with the management of the Small Steering Committee

---

**Summary:**

Head of the Small Steering Committee proposed:

- to carry out the next session of the Working/learning Groups on the week starting February 8
- to prepare questions for the first five standards in Annex 2 of the Explanatory Notes
- to prepare the Explanatory Notes for EN 12732 and EN 1776 for the next session

ITS experts agreed this proposal.

---

Closing meeting with the Key Expert and Communication Expert to summarize the results of the mission.

**Summary:**

During the meeting it was decided to :

- organize the next mission from 8 February to 12 February;
- the draft of Agenda is:

**15:30-17:30**

**9 February:** Meeting of the Small Steering Committee; the session of the Working /learning Group 1 (EN 1594, EN 16348).

**10 February:** The session of the Working /learning Group 3 (EN 12327); The session of the Working /learning Group 5 (EN 12 186);

**11 February:** The session of the Working /learning Group 3 (EN 12732\_A1:2014); The session of the Working /learning Group 4 (EN 1776:2015);

**Friday 22<sup>nd</sup> January 2016**

*Travel to Ukraine*



### 2.9.3. Annex3. Mission report: Dr. Petrenko's second visit to Georgia as part of the fulfilment of CWP03&04GE

## Mission report Dr Petrenko's second visit to Georgia as part of the implementation of CWP 03&04GE

Dr Viktor Petrenko undertook a mission to Georgia from the 8<sup>th</sup> to the 12<sup>th</sup> of February 2016 to:

- Carry out a meeting of the small Steering Committee "Current situation with adoption and implementation of European gas functional of standards in Georgia"
- Attend a meeting of the Working/learning Group on results of learning EN 1594 и EN 16318;
- Attend a meeting of the Working/learning Group on results of learning EN 12327;
- Attend a meeting of the Working/learning Group on results of learning EN 12186 и EN 12583;
- Deliver an overview of European gas functional standards EN 12732;
- Deliver an overview of European gas functional standards EN 1776.

Below is a summary of the activities in chronological order.

#### Monday 08<sup>th</sup> February 2016

- Travel to Georgia

#### Tuesday 09<sup>th</sup> February 2016

---

**GOGC.** A meeting of the Small Steering Committee "Current situation with adoption and implementation of European gas functional of standards in Georgia"

**Participants:**

Members of the Small Steering Committee

**Summary of discussions:**

10:30-  
13:00

1. Plans for adopting the standards studied in 2016. All 7 standards will be included in the national standardization plan for the next year. Russian versions of standards will be approved by the TC and transferred to the national standards body. Translated Russian versions will have the status of a reference annex and will be provided upon request to the buyer of the standard.
  2. Preparation for the workshop, based on the comments received from Working/learning Group Leaders. ITS experts will prepare questions in English, and provide them in advance for Senior Gas Industry Expert.
  3. The interaction and exchange of information with the Ukrainian Working/learning Groups. It was decided to ask the ITS experts to organize the exchange of information and translated versions of standards. The decision on the final version of the standards is taken only by a technical committee.
-

- 
4. Take into consideration the beginning of the set up of an independent technical gas committee in Georgia. Ask the project to organize a meeting of representatives of the Georgian and Ukrainian Technical Committees for the harmonization in the framework of the final conference for the Road Map.
  5. Monitoring results of working/learning groups. The Small Steering Committee held a discussion about the activity of Working/Learning Groups.
  6. Carry out the final workshop on March 22, 2016.
- 

**GOGC.** Session of the Working/learning Group #1: Discussion of European gas functional standard EN 16348.

14.00 - **Summary:**

14.30 General conclusion: no significant comments about this standard. The quality of the translation allows for development to happen on the basis of the reference annex in Russian. ITS experts: to prepare the final version of the Russian translation from a bilingual version.

14:40 - Session of the Working/learning Group #1: Discussion of European main gas functional standard and EN 1594.

17:10

**Summary:**

Working/learning Group #1 formulated the following questions to Senior Gas Industry Expert:

1. Why does the formula for determining the wall thickness use different pressure units (voltage) - bar and MPa? What determines the use of the non-systemic unit of bar in normative documentation?
  2. Isn't it better to use, instead of the term "Gas infrastructure", for example, the term "Systems of storage and pipeline transportation of gas (natural)"?
  3. Does EN 1594 exclude or not the use of above ground pipelining?
  4. It is clear that the standard is functional, but some of the basic requirements could still be formulated as specific, or is it inappropriate? Why?
  5. In some places the requirements are not stated and the reference is made to the Normative Reference (NR), as in it. 8.6 "Valves", in other places the requirements are also incomplete with reference to the NR, and in some places only the requirements are given that are also incomplete with no reference. Do you think such an approach is correct? What is the purpose of stating the incomplete requirements, if the designer must use the Normative Reference?
-

- 
6. Please explain how to understand the concept of "standby organisation:" and who is the standby organisation: for foreign companies?
  7. Which documents should the specialists use in the design, construction, and operation of HDD, micro-tunneling, ground crossings, in selecting external insulation from atmospheric corrosion, when such standard has no such NRs?
  8. The specialists do not consider the trunk pipeline TC 234 to be a transport structure? If they consider it to be such then why do they call it "a piping system"? For information: (Wikipedia definition) **A pipeline** - engineering structure, intended for the transport of gaseous and liquid substances... **Gas pipeline** - engineering structure, intended for the transportation of gas and its products (primarily natural gas) via the pipeline.
  9. It is known that the wall thickness is taken for the calculation, and no one will take this value below the required. Then, what is the point of giving Table 1, the more so that pipes of different diameters have the same limitations (e.g., D406,4 mm, 508 mm and 610 mm – t=6,3 mm)? In addition, it limits the generality of using the formula. Maybe it would be better to specify more the value of the safety factor for different operating conditions?

General conclusion: The Technical Committee shall refine the standard translation on the basis of the responses from Senior Gas Industry Expert and debates during the seminar of March 22, 2016.

The Working Group shall submit to the Task Leader the lists of associated standards for comments within two weeks. ITS experts shall prepare their comments and recommendations by March 11.

---

### Thursday 10<sup>th</sup> February 2016

---

10.00 - **GOGC**. Session of the Working/learning Group #3: Discussion of the European gas  
12.45 functional standards - EN 12327

**Summary:**

- General conclusion: Standards and other normative documents have a very high status, almost equated to the status of legal documents. Therefore, they should be written in clear and understandable language, not allowing for an ambiguous interpretation. The question is - what skill levels should master the practitioner who will require the use of functional standards TC 234?
  - Dr Petrenko: You need to separate the problems of translation and technical understanding of the standard. Translation problems are identified and
-

corrected. Other questions will need to prepare for Senior Gas Industry Expert: Working/learning Group #3 formulated the following questions to Senior Gas Industry Expert:

1. What is the meaning of the word "liquid" in paragraphs 4.2, 4.3, and 4.4 of the standard?
2. Does Mr Phil believe that the wording: "A care should be given to dry the test section of the pipeline before commissioning" does not contain anything specific and has the character of an appeal?
3. In Item 5.1.3, what are the "exceptional circumstances"? What is a break in operation of the of gas pipeline in these cases? What are the pressure levels? Inspection would help the pipeline, with the operating pressure, for example, of 10 MPa?
4. What does "Indirect purging of gas pipeline" mean?
5. The wording: "Attention should be paid to the specific physical characteristics of the purge gas." What is meant by physical characteristics of the purge gas?
6. Statement: "Safe and acceptable concentration of the gas." And what is it? It was impossible to specify this in the standard?
7. Item 5.3., what is the "an unknown backfeed"? *"When the gas has been vented to atmospheric pressure, the vent shall be closed and a test carried out to ensure that the pressure does not increase as a result of an unknown backfeed."*
8. "Visual test method", "The visual inspection method," or simply "Visual inspection"?
9. Widely used method of measuring the volume under a hydrostatic test? Does it requires such a selection, or is it just an option for the hydraulic test? What is meant by "methods of testing" (Item 4.1.3.)?
10. What is a "differential pressure measurement method"?

14:00-  
16:30

Session of Working/learning Group #5: Discussion of the European gas functional standards - EN 12186

**Summary:**

- *General conclusion of working group:* Translation requires editing and, maybe, corrections.

Dr Petrenko explained that the current version of the standard has not changed much compared to the previous one, so it was not subjected to a new translation.

Dr Petrenko replied to 29 questions on the text of the standard. On the basis of a fruitful discussion several questions have been prepared to Senior Gas Industry Expert:

1. Why call a second pressure regulator a "monitor", when it is a conventional regulator? Is not it better, for example, to call it "pilot (monitoring) pressure regulator"?

---

## 2. What does "Allowable safe temperature of the pipeline system" mean?

---

Session of Working/learning Group #5: Discussion of European gas functional standards - EN 12583

**16:30-  
17:00** **Summary:**

The members of the Working Group made no significant comments. They requested to familiarize themselves with the comments of Ukrainian working group.

---

### Thursday 11<sup>th</sup> February 2016

---

**GOGC.** Session of Working/learning Group #2: Deliver an overview of European gas functional standards - EN 12732

**Summary:**

Dr Petrenko presented a detailed description of the standard structure and differences with the previous version. Working Group #2 drafted preliminary conclusions.

**10:30-  
12:30**

Unfortunately, the version of the standard provided does not allow for substantive comments. We can but limit ourselves to the comment that too many mandatory normative references (42) can make the practical use of the standard extremely difficult. For example, a standard of similar purpose API 1104 with the volume of 116 pages, has practically no binding normative references.

Dr Petrenko recommended to start the study of normative references and in the near future submit a list for adoption in view of priorities.

---

**GOGC.** Session of Working/learning Group #4: Overview of EN 1776: 2015 Gas infrastructure - Gas measuring systems - Functional requirements

**14:00-  
16:00** **Summary:**

Dr Petrenko presented a detailed description of the standard structure, the differences from the previous version. Conducted an analysis of normative references.

### Friday 12<sup>nd</sup> February 2016

- *Travel to Ukraine*

## 2.9.4. Annex 4. Workshop agenda

<p><b>Agenda</b>  <b>INOGATE Event:</b>  <b>“Workshop on accessibility and implementation of international technical regulations and standards in the gas sector” (CWP 04.GE)</b>  <b>Date 22 March 2016</b>  <b>Tbilisi, Georgia</b></p>
---

### 22 March 2016

<b>MORNING SESSION: Chair:</b> Dr Viktor Petrenko Senior Standardization Expert / Task Leader - Standardisation Expert, ITS	
10:00-10:15	Opening of the session and presentation of the INOGATE project, Welcome address from host organization Mr. Nikos Tcakalidis Deputy Team Leader, INOGATE Secretariat.
10:15-11:00	UK influence in the developing EU standards for gas transmission Senior Gas Standardization Expert –Mr.Phil Winnard
11:00-11:45	The role of the health and safety executive and technical associations in applying European standards in the UK gas industry Senior Gas Standardization Expert –Mr.Phil Winnard
11:45 – 12:00	<i>Coffee Break</i>
12:00-13.00	UK network operator implementation of European standards. Senior Gas Standardization Expert –Mr.Phil Winnard Case study of UK gas network operator development of Code of Practice in accordance with EN 12186 Gas supply systems –Gas pressure regulating stations for transmission and distribution
13:00-13:30	Problems with the implementation of functional gas standards in Ukrtransgaz. Questions to Senior Gas Standardization Expert –Mr.Phil Winnard on EN1594,EN 12327,EN12186, EN1776,EN12583, EN16348 Dr. Teimuraz Javakhishvili, Head of Design Department GOGC, Coordinator of Working/ Learning Groups
13:30 – 14:30	<i>Lunch</i>
<b>AFTERNOON SESSION: Chair:</b> Dr Viktor Petrenko Senior Standardization Expert / Task Leader - Standardisation Expert, ITS	
14:30-15:00	Discussion members of Working/ Learning Groups Senior Gas Standardization Expert –Mr.Phil Winnard on EN1594

	Moderator Dr Viktor Petrenko Senior Standardization Expert / Task Leader - Standardisation Expert, ITS:
15:00-15:30	Discussion members of Working/ Learning Groups Senior Gas Standardization Expert –Mr.Phil Winnard on EN12327  Moderator Dr Viktor Petrenko Senior Standardization Expert / Task Leader - Standardisation Expert, ITS:
15:30-16:00	Discussion members of Working/ Learning Groups Senior Gas Standardization Expert –Mr.Phil Winnard on EN1776  Moderator Dr Viktor Petrenko Senior Standardization Expert / Task Leader - Standardisation Expert, ITS:
16:00-16:30	Discussion members of Working/ Learning Groups Senior Gas Standardization Expert –Mr.Phil Winnard on EN12186, EN 12583and EN 16348  Moderator Dr Viktor Petrenko Senior Standardization Expert / Task Leader - Standardisation Expert, ITS:
16:30 – 16:50	<i>Coffee Break</i>
16:50-17:20	Present and discuss the optimal set of standards needed for complex systematic implementation of European gas functional standards for pipelines with MOP more 16 bar  Dr Viktor Petrenko Senior Standardization Expert / Task Leader, ITS
17:20-17:40	Implementation plan model for gas company implementation of European standards for gas transmission  Senior Gas Standardization Expert –Mr.Phil Winnard
17:40-18:00	Summary of seminar

### 2.9.5. Annex 5 List of participants

1	Mr. Sulkhani Tabaghua	GEOSTM	Head of Information Centre for world trade organization of Georgia, CHAIRMAN OF ELECTRO TECHNICAL COMMITTEE
2	Mr. Teimuraz Gochitashvili	GOGC	Advisor to General Director
3	Mr. Teumuraz Javakhishvili	GOGC	Head of Design Unit
4	Gia Khizanishvili		"Socar Georgia Gas" - Director's Adviser
5	Anton Goguadze	GOGC	Deputy of Technical Director / GOGC
6	Rostom Tsertsvadze		Director of the wired-Exploitation Saguramo Branch
7	k. Teliashvili	GOGC	Planning and design Service leading specialist /Design Engineer
8	I.Lekiasvili	GGTC	Head of the construction Supervision Department at the Georgian Gas Transportation Company's
9	a.Ksovreli	GGTC	Georgian Gas Transportation Company measurement-control appliances and metrology department;
10	R.chikashua	GGTC	Head of the Department the Information Technology at Georgian Gas Transportation Company
11	m.losaberidze	GGTC	Director of the Terdjola Branch
12	g.shashviashvili	GGTC	Head of the Operations Department
13	Gabriel Vatitadze	GOGC	chief specialist at the Construction Quality Management and Control Dep. at GOGC
14	a.Ksovreli	GGTC	Measuring-control appliances and metrology department/GGTC
15	r. chikashua	GGTC	Head of the Information Technology Department/GGTC
16	Iuri Burduli	GGTC	Director of the Kvesheti's Branch



17	S. Tsintsadze	GOGC	Design Engineer at the Planning and design Service/GOGC
18	V.khetaguri	GOGC	Head of the Construction Quality Management and Control Department
19	G.Shemozashvili	Ministry of Energy of Georgia	Chief Specialist of the Energy and Natural Resources Department
20	t. Mrevlishvili	GOGC	leading specialist / Design Engineer at the Planning and design Service
21	Gigla tamazashvili	GOGC	leading specialist Engineer
22	Archil Dekanosidze	GOGC	Head of the Engineering Department

### 2.9.6. Annex 6 Answers on most important questions about the European gas functional standards

#	Question	Reply
1	Why do you call a second pressure regulator a “monitor”, when it is a conventional regulator?	The name ‘Monitor Regulator’ comes from gas industry jargon used in the UK. The ‘Monitor Regulator’ is open and not controlling when the ‘Active Regulator’ is working ok and controlling the gas pressure. If the ‘Active Regulator’ breaks down (faults) then it is designed to be open and the ‘Monitor Regulator’ will then take control.
2	What does "Allowable safe temperature of the pipeline system"?	The allowable safe temperature means the highest gas temperature that is allowed in a pipeline. The temperature is limited because materials may be damaged at high temperatures. Especially seals in meter and regulator equipment which are made from synthetic materials
3	Why does the formula for determining the wall thickness use different pressure units (voltage) – instead of bar and MPa? What determines the use of the non-systemic unit of bar in normative documentation?	The bar is a metric unit of pressure, but not part of the International System of Units (SI). It is exactly equal to 100000 Pa and is slightly less than the average atmospheric pressure on Earth at sea level.  Historically in western Europe the metric system was adopted to replace individual country systems such as imperial in the UK.
4	Isn't it better to use, instead of the term "Gas infrastructure", for example, the term "Systems of storage and pipeline transportation of gas (natural)"?	Infrastructure is an industry jargon term used in Western Europe for many types of equipment. It is a generic term to cover all gas equipment
5	Does EN 1594 exclude or not the use of above ground pipelining?	Pipelines in western Europe are almost always laid below ground to reduce the risks from fire explosion etc. Whilst EN 1594 does not exclude above ground pipelines reference would need to be made to process piping standards such as ASME 31.3 or EN 13480. Above ground piping is generally only used within site boundaries and not across country
6	It is clear that the standard is functional, but some of the basic requirements could still be formulated as specific, or is it inappropriate? Why?	The standards rely upon company codes of practice or technical institution standards for providing the detail required for implementation. The European standards mainly provide the design principles to be applied.
7	In some places the requirements are not stated and the reference is made to the Normative Reference (NR), as in Item 8.6 “Valves”, in other places	The standards rely upon company codes of practice or technical institution standards for providing the detail required for implementation. The European standards mainly provide the design principles to be

	the requirements are also incomplete with reference to the NR, and in some places only the requirements are given that are also incomplete with no reference. Do you think such an approach is correct? What is the purpose of stating the incomplete requirements, if the designer must use the Normative Reference?	applied.
8	Please explain how to understand the concept of "standby organisation:" and who is the standby organisation: for foreign companies?	The standby organization is the company who is the emergency service provider for gas leaks and gas incidents. It can be the same company as the TSO or DSO or can be one company providing the service if there are a number of TSO's or DSO's in the same country
9	Which documents should the specialists use in the design, construction, and operation of HDD, micro-tunneling, ground crossings, in selecting external insulation from atmospheric corrosion, when such standard has no such NRs?	The stands rely upon company codes of practice or technical institution standards for providing the detail required for implementation. The European standards mainly provide the design principles to be applied.
10	The specialists do not consider the trunk pipeline TC 234 to be a transport structure? If they consider it to be such then why do they call it "a piping system"? For information: (Wikipedia definition) A pipeline - engineering structure, intended for the transport of gaseous and liquid substances... Gas pipeline - engineering structure, intended for the transportation of gas and its products (primarily natural gas) via the pipeline.	Piping system is jargon used in western Europe to describe all parts of the pipeline system including valves etc., Pipelines generally throughout the world are called gas transportation systems as they are used to transport gas down the pipeline similar to vehicles which are used to transport people
11	It is known that the wall thickness is taken for the calculation, and no one will take this value below the required. Then, what is the point of giving Table 1, the more so that pipes of different diameters have the same limitations (e.g., D406,4 mm, 508 mm and 610 mm – t=6,3 mm)? In addition, it limits the generality of using the formula. Maybe it would be better to specify more the value of the safety factor for different operating conditions?	Table 1 provides information on the minimum wall thickness of pipes to be used on gas stations. The minimum wall thickness is specified to resist impact damage or crushing due to sagging or bending
14	What is the meaning of the word	Need to discuss

	"liquid" in paragraphs 4.2, 4.3, and 4.4 of the standard?	
15	Does Mr Phil believe that the wording: "A care should be given to dry the test section of the pipeline before commissioning" does not contain anything specific and has the character of an appeal?	The wording means that the pipeline should be dried after a hydrostatic test and before commissioning. The wording is used regularly in Europe. Detailed procedure for testing and draying or provided in Company codes of practice and technical Institution standards
16	In Item 5.1.3., what are the "exceptional circumstances"? What is a break in operation of the of gas pipeline at these cases? What pressure levels? Inspection would help the pipeline, with the operating pressure, for example, of 10 MPa?	Check reference
17	What does "Indirect purging of gas pipeline" mean?	It means commissioning the pipeline by removing the air contained in the pipeline with an inert gas such as nitrogen before introducing natural gas
18	The wording: "Attention should be paid to the specific physical characteristics of the purge gas." What is meant by the physical characteristics of the purge gas?	The purge gas is usually nitrogen. It must be inert and have no corrosive effect on the pipeline
19	Statement: "Safe and acceptable concentration of the gas." And what is it? It was impossible to specify this in the standard?	Check reference
20	In Item 5.3., what is the " an unknown backfeed "? "When the gas has been vented to atmospheric pressure, the vent shall be closed and a test carried out to ensure that the pressure does not increase as a result of an unknown backfeed."	An unknown 'backfeed ' is an unknown connection to the pipeline. For example, if a section of pipeline is isolated at closed valves a check should be carried out to ensure there is no unknown connection which could re-pressurize the pipeline
21	"Visual test method", "The visual inspection method," or simply "Visual inspection"?	The term could be replaced with visual inspection and means any inspection by human sight, for example checking for pipeline surface corrosion on above ground sections of pipe
22	What is the most widely used method of measuring the volume under a hydrostatic test? Does it requires such a selection, or is it just a method for the hydraulic test? What is meant by "methods of testing" (It. 4.1.3.)?	It means an industry approved method of carrying out measurements during a hydraulic test
23	What is a "differential pressure measurement method"?	It measures the pressure drop across a piece of equipment such as a gas filter

**2.9.7. Annex 7. The first draft of Work Plan of the Georgian Electrotechnical Committee TC 1 (Natural Gas Subcommittee) on 2016 - 2019 for adoption of the minimum set of European and other standards for effective implementation of priority European gas functional standards**

Please see separate document

### 2.9.8. Annex 8 List of additional priority gas standards recommended for adoption by Georgia in 2016-2020

#	Overall numbering based on the whole table
Reference	European or international standard reference
TOTAL	Total number of adopted standards
New	Number of the first adopted standards

#### Abbreviations

	Reference	2016		2017		2018		2019		2020		TOTAL	
		Plan		Plan		Plan		Plan		Plan		Plan	
		total	new	total	new	total	new	total	new	total	new	total	new
		42	42	7	7	8	6	4	4	9	1	70	60
1	IIW-IAB-252-07					1	1					1	1
2	EN ISO 636	1	1									1	1
3	EN 837-3	1	1									1	1
4	EN 837-2	1	1									1	1
5	EN 837-1	1	1									1	1
6	EN 1012-3	1	1									1	1
7	EN 1515-3	1	1									1	1
8	EN 1708-1							1	1			1	1
9	EN 1918-4			1	1							1	1
10	EN ISO 2560	1	1									1	1
11	EN ISO 3183	1	1									1	1
12	EN ISO 3452 (all parts)	1	1									1	1
13	ISO 3977-2									1		1	0
14	ISO 3977-1									1		1	0
15	EN ISO 5167-2					1	1					1	1
16	EN ISO 5167-1			1	1							1	1
17	EN ISO 6520-1	1	1									1	1
18	EN ISO 6892-1	1	1									1	1
19	EN ISO 9692-1					1	1					1	1
20	EN ISO 9712					1						1	0
21	EN 10301	1	1									1	1
22	EN ISO 10437	1	1									1	1
23	EN ISO 10439	1	1									1	1
24	EN ISO 10715	1	1									1	1
25	EN ISO 12213-1	1	1									1	1
26	EN 12405-3	1	1									1	1
27	EN 12405-2	1	1									1	1
28	EN 12560-4	1	1									1	1
29	EN 12560-3	1	1									1	1

	Reference	2016		2017		2018		2019		2020		TOTAL	
		Plan		Plan		Plan		Plan		Plan		Plan	
		total	new	total	new	total	new	total	new	total	new	total	new
30	EN 12560-2	1	1									1	1
31	EN 12560-1	1	1									1	1
32	ISO 13707									1		1	0
33	CEN/TR 13737-2			1	1							1	1
34	CEN/TR 13737-1			1	1							1	1
35	EN ISO 13849-1	1	1									1	1
36	EN ISO 14001	1	1									1	1
37	EN ISO 14171	1	1									1	1
38	EN ISO 14174	1	1									1	1
39	EN ISO 14175	1	1									1	1
40	EN ISO 14341	1	1									1	1
41	EN 14870-2							1	1			1	1
42	EN 14870-1							1	1			1	1
43	CEN/TS 15399	1	1									1	1
44	EN ISO 15607			1	1							1	1
45	EN ISO 15609-2	1	1									1	1
46	CEN ISO/TR 15608							1	1			1	1
47	EN ISO 15609-1			1	1							1	1
48	EN ISO 15610	1	1									1	1
49	EN ISO 15611	1	1									1	1
50	EN ISO 15613									1		1	0
51	EN 16348	1	1									1	1
52	EN ISO/IEC 17020	1	1									1	1
53	EN ISO/IEC 17025			1	1							1	1
54	ISO 17089-2									1	1	1	1
55	EN ISO 17632	1	1									1	1
56	EN ISO 17636-2					1	1					1	1
57	EN ISO 17636-1					1	1					1	1
58	EN ISO 17637					1	1					1	1
59	EN ISO 17638	1	1									1	1
60	EN ISO 17640					1						1	0
61	OHSAS 18001	1	1									1	1
62	EN ISO 18275	1	1									1	1
63	EN 60079-17	1	1									1	1
64	EN 61000 (all parts)	1	1									1	1
65	EN 61508 (all parts)	1	1									1	1
66	EN 61511 (all parts)	1	1									1	1
67	EN 62305-4									1		1	0
68	EN 62305-3									1		1	0
69	EN 62305-2									1		1	0

	Reference	2016		2017		2018		2019		2020		TOTAL	
		Plan		Plan		Plan		Plan		Plan		Plan	
		total	new	total	new	total	new	total	new	total	new	total	new
70	EN 62305-1									1		1	0