Report on the results of standardisation activities between 2012 and 2015
(part of RWP 05)

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### Abbreviations

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<th>Abbreviation</th>
<th>Full Form</th>
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<tr>
<td>AHEF</td>
<td>Ad Hoc Expert Facility</td>
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<td>AM</td>
<td>Armenia</td>
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<td>AP</td>
<td>Action Plan</td>
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<td>AZ</td>
<td>Azerbaijan</td>
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<td>BY</td>
<td>Belarus</td>
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<tr>
<td>CEN</td>
<td>European Committee for Standardization</td>
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<td>CENELEC</td>
<td>European Committee for Electrotechnical Standardization</td>
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<td>CIS</td>
<td>Commonwealth of Independent States</td>
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<td>DCFTA</td>
<td>Deep and Comprehensive Free Trade Agreement</td>
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<td>DVGW</td>
<td>German Technical and Scientific Association for Gas and Water</td>
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<td>EASC</td>
<td>Euroasian Interstate council for standardization, metrology and certification</td>
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<td>EU</td>
<td>European Union</td>
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<td>FSO</td>
<td>Formal Standardisation Organisation</td>
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<td>GE</td>
<td>Georgia</td>
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<td>GWI</td>
<td>German Institute of Gas and Heating</td>
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<td>IEC</td>
<td>International Electrotechnical Commission</td>
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<td>INOGATE</td>
<td>INterstate Oil and GAs Transportation to Europe</td>
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<td>ISO</td>
<td>International Organization for Standardization</td>
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<td>ITC</td>
<td>Interstate Technical Committee for Standardization</td>
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<td>ITS</td>
<td>INOGATE Technical Secretariat</td>
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<td>KG</td>
<td>Kyrgyzstan</td>
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<td>KZ</td>
<td>Kazakhstan</td>
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<td>MARCOGAZ</td>
<td>Technical Association of the European Natural Gas Industry</td>
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<td>MD</td>
<td>Republic of Moldova</td>
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<td>NS</td>
<td>National Standard</td>
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<td>NSB</td>
<td>National Standardisation Body</td>
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<td>OEVGW</td>
<td>Austrian Gas and Water Industry Association</td>
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<td>PC</td>
<td>Partner Country</td>
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<tr>
<td>RM</td>
<td>Road Map</td>
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<td>SSO</td>
<td>Specialized Standardisation Organisation</td>
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<td>TC</td>
<td>Technical Committee (standardisation unit)</td>
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<td>TEG</td>
<td>Technical Expert Group</td>
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<td>TJ</td>
<td>Tajikistan</td>
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<td>TM</td>
<td>Turkmenistan</td>
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<tr>
<td>ToR</td>
<td>Terms of Reference</td>
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<td>UA</td>
<td>Ukraine</td>
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<td>UZ</td>
<td>Uzbekistan</td>
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Executive Summary

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

In order to help PCs build up their capacity to gradually harmonise their standardisation system with European best practice the ITS has, in close cooperation with the PCs, developed standardisation road maps and action plans establishing regional and national priorities taken from the relevant lists of the Energy Community Secretariat for the adoption of international and European electricity and gas standards for effective cooperation with the EU. This report summarizes the efforts made and results achieved of the approximation of the technical regulatory system of the PCs to that of the EU between 2012 and 2015. It describes the standardisation system currently in place in the PCs, the changes that have been achieved so far and actions that need to be completed in order to harmonise it with the European system.

The report divides the harmonisation efforts related to standardisation into an institutional building part comprising the establishment of an NSB, its relationship with international and European FSOs, the establishment of national TCs capable of following the work of international and European TCs, and a technical part, comprising adoption of a package of international and European standards allowing to remove effectively the existing barriers to trade between the energy markets of the PCs and the EU.

All PCs have so far established an independently operating NSB allowing them to establish relationships with international and European FSOs. The majority of PCs has made a good start in setting up national TCs capable of ‘shadowing’ international and European TCs. As a result of the efforts made by the project the majority of PCs have made good progress in adoption of a large part of the electricity and gas standards of the list of the Energy Community Secretariat identified as priority standards and are expected to finalize adoption of these standards within the next 2 years.

The report also refers to a number of regional events organised and their importance in enhancing the knowledge of harmonisation techniques and practices required to approximate the system of the PCs to that of international and European best practice.
1 Introduction

INOGATE is one of the longest running energy-related technical assistance programmes funded by the European Union. It started in 1996 and works within the policy frameworks of the Baku Initiative and the Eastern Partnership. INOGATE cooperates with 11 PCs to support a reduction in their dependency on fossil fuels and imports, improve the security of their energy supply and mitigate overall climate change.

One of the main barriers to trade between the EU and INOGATE PCs is the lack of mutually accepted standards, which significantly limits the prospects for beneficial cooperation. INOGATE PCs are still operating a legacy standardisation system based on the former Soviet model of which most standards do not correspond with international or European standards.

A number of INOGATE PCs have showed their readiness to generally approximate their national standardisation system to the European standardisation system, which will facilitate trade with the European Union, while other PCs through their involvement in trans-national energy projects are required to adopt and implement a package of relevant international and European standards.

In order to assist the INOGATE PCs in adopting and implementing EU best practice in their standardisation systems, the INOGATE Technical Secretariat (ITS) prepared Road Maps (RM) and Action Plans (AP) on harmonisation of standards and codes in the electricity and gas sectors for 8 of 11 PCs targeted by this project that have signalled their willingness to cooperate. The RMs and APs describe the standardisation system currently in place in the PCs, the changes required in order to harmonise it with the European standardisation system and the actions needed to achieve this.

The Road Maps and Action Plans aim to:

- identify the main factors hindering effective processes of adoption and implementation of international and European standards in the INOGATE PCs;
- provide a definition of the most important areas and objectives of activities which are necessary to ensure the harmonisation of gas and electricity standards to result in a reduction and subsequent elimination of the existing technical barriers to trade;
- recommend a set of steps to take in order to reduce the gap between standardisation systems and harmonise with European best practice.

The current “Report on results of standardisation activities between 2012 and 2015” provides a general overview for all INOGATE PCs, summarising the state of play regarding adoption and implementation of European standards relevant to energy supply in the electricity and gas sector. It is based upon work which the INOGATE project team has carried out in the period between 2012 and 2015 in a close working dialogue with the PCs who have made counterpart staff available for technical discussions during missions and who have contributed with their comments and observations during the process.

This report only contains a summary of the results achieved in the INOGATE PCs. Detailed information is included in the Road Maps and Action Plans of each PC. It is envisaged that these documents will provide relevant information both for general and specialist users.

2 The advantages for the PCs to adopt the EU Directives and related standards and codes in the gas and electricity sector

Adoption of EU Directives and Regulations and related standards and codes relevant to the electricity and gas sector will lead to:

- the modernisation of national electricity networks and gas transmission infrastructure;
- a connection to international electricity and gas transmission networks;
- increasing the reliability of electricity and gas delivery to businesses and consumers;
- better protection of consumers by making available higher quality and safer products;
- more business opportunities and fair and equal competition for small and medium enterprises by creating equal conditions; and
- more efficient use of energy and the development of renewable energy sources.

3 Regional activities and results

3.1 Regional Study Visit “Gas Transmission Aspects” – Bonn and Essen, 9-11th April 2014

Introduction

In the framework of an ITS initiative, experts from ten PCs participated in a regional seminar and study visit to Germany with the objective to share knowledge and get acquainted with best practice in the field of gas transmission. To that purpose, visits were planned to three organisations active in different fields of gas transmission, the German Technical and Scientific Association for Gas and Water (DVGW) in the city of Bonn, a body under private law established to support industry by developing and publishing codes of practice as an SSO\(^1\), which can be used in the production, transportation, distribution and use of energy and potable water, the Open Grid Office in the city of Essen, an independent transmission system operator originally established as a subsidiary of the German E.ON gas supply company in 2004, which has evolved into Germany’s leading natural gas transporter, and the German Institute of Gas and Heating (GWI) also in the city of Essen, a research and development institute under private law dealing with appliance technology and fuel engineering, industrial engineering and combustion technology, operating an accredited testing laboratory. DVGW, Open Grid Office and GWI work in close cooperation with each other.

Content of the study visit

The study visit consisted of three days of presentations, from both the hosts and the participants.

The first day was hosted by DVGW at its Head Office in the city of Bonn. At DVGW participants were introduced for the first time to international and European functional (safety) standards for transmission pipelines as part of a coherent system of formal standards supported by DVGW codes of practice. It was clarified in which way DVGW codes have laid the foundations for technical self-regulation by the German gas and water industry by aiming at ensuring safety of gas and water supply at highest international level resulting in the establishment of a gas network safety system based on European functional safety standards supported by DVGW codes of practice. Experts from Ukraine and Belarus availed themselves of the opportunity to highlight experiences with the introduction and use of international and European standards into their national regulatory systems. Experts from Georgia, Azerbaijan, Moldova, Kyrgyzstan, Tajikistan and Uzbekistan presented development and construction aspects of their gas transportation systems.

The second day was hosted by Open Grid Office at their premises in the city of Essen, and mainly dedicated to the relationship of DVGW codes of practice to standards developed by FSOs (such as ENs developed by a

\(^1\) Specialised Standardisation Organisation (SSO) generally refers to the thousands of industry- or sector-based standards organisations that develop and publish industry specific standards, such as codes of practice.
regional standardisation organisation like CEN and published by an NSB) and to practical application aspects in the field of gas transmission. PCs were offered the opportunity to present and discuss aspects of gas transmission, such as the role and influence of national technical regulations.

The third day took place at the premises of GWI in the city of Essen. Participants were informed about the importance of research and development of gas transmission systems. The meeting was concluded with a visit to the testing facilities of GWI and a demonstration of specific gas transmission hazards by way of controlled gas explosions.

Results

The event contributed considerably to enhancing the knowledge and understanding of the PCs by providing a useful insight in the way a country as Germany, with a long history in the field of transportation of combustible fluids, and in a wider perspective the EU, is dealing with design, construction, safety and environmental aspects of gas transmission systems. Internationally and also among the PCs the German approach is considered best practice, based on 100 years of gas transmission networks operation without major accidents. The German system is considered as a ‘light’ system, in the spirit of laying down only essential requirements in technical regulations and leave it to the expertise of economic operators (and the standards initiated by them) how to best translate these requirements into state-of-the-art solutions.

The major impact of the event proved to be the recognition of the value and following adoption by the majority of PCs of the self-regulation principles as laid down in EU Directives, ENs and related codes of practice and subsequent modernisation of their regulatory systems in the gas sector in line with European best practice.

Information source: Event Report

3.2 Regional Seminar and Study Visit “Development of Harmonization Road Maps and Action Plans, and Capacity Building recommendations” – London, 8-11th July 2013

Introduction

In the framework of an ITS initiative experts from 9 PCs participated in a regional seminar and study visit with the general objective to introduce international and European standards in the INOGATE PCs and create conditions for their sustainable application and utilisation, requiring a study of the standardisation systems in the PCs, identification of possible gaps in approximation of European best practice and development of Road Maps and Action Plans.

Content of seminar and study visit

The seminar was divided into 6 sessions addressing

- the definition and determination of regional and national priority electricity and gas standards,
- the review of standardisation and technical legislative systems;
- the development of Road Maps and Action Plans by the TEG in close cooperation with the PCs; and
- the presentation of BSI as case study for a European type of NSB.

Results

As a result of the discussions, it was concluded that for the harmonisation of electricity standards it will be necessary, to actualise the list of generally applicable standards of the Energy Community Secretariat, identify priority standards, find a solution for normative references and investigate the possibility for
adoption without translation into the national language. It was also recommended that PCs should establish official relationships with the right holders of the priority standards identified.

Overall, participants gained an understanding of the considerations underlying identification and choice of priority electricity and gas standards to achieve the objectives of the INOGATE project and an initial perception of the role and content of the Road Maps and Action Plans and the guidance these will provide.

Getting acquainted with the layout and equipment of the testing facilities visited and the type of tests that can be performed at the facilities visited was important to support PCs getting an impression of how and in which way they can update their infrastructure for certification and testing of products in the framework of the Energy Community acquis of regulations and related standards.

Information source: Event Report

### 3.3 Regional Seminar “Aligning the standardisation systems with the EU standardisation system based on the New Approach” – Brussels, 29-30th January 2013

#### Content of the seminar

The seminar was divided into two Round Tables, which covered the procedure of adoption of international and European standards by the ‘cover page’ method or any other method that does not require translation into the national language; and National TCs (and NSBs) and their participation in international, European and interstate TCs.

At the time of the event, the understanding of harmonisation of priority standards did not appear homogenous among all PCs.

Information source: Event Report

#### Table 1: Summary of all 3 activities

<table>
<thead>
<tr>
<th>Implemented/ Ongoing Activities</th>
<th>Results</th>
<th>Impacts</th>
<th>Areas</th>
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<tr>
<td><strong>ELECTRICITY AND GAS</strong></td>
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<tr>
<td>Study Visit “Gas Transmission Aspects” – Bonn and Essen 9-11th April 2014.</td>
<td>The participants gained knowledge of gas transmission practices in Germany and understanding of how standards can be incorporated into the legal framework, as well as the usefulness of the harmonized European Standards.</td>
<td>In the medium term: Development and adoption of gas functional standards. Modernisation of gas infrastructure.</td>
<td>Harmonization of Electricity and Gas Standards.</td>
</tr>
<tr>
<td>Regional seminar on capacity building of National Standardisation Bodies (NSBs), 8-11 July 2013, seminar in London</td>
<td>BSI structure and methods in the development of standards was discussed. Testing laboratories were</td>
<td>In the medium term: Improved functioning of NSBs, identification of technical barriers to trade, and improved</td>
<td>Harmonization of Electricity and Gas Standards</td>
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and study visit to British Standards Institution (BSI) head office and BSI laboratories in Loughborough.

Regional Seminar: Moving towards a new approach on standardisation and harmonisation of Electricity and Gas standards and codes. 29-30 January 2013, Brussels.

Capacity built among participants on the new EU approach on standardisation. In the medium to long term: Standardisation systems of PCs aligned with the EU standards, allowing for adoption of the EU standards and focus on technical barriers to trade of electricity and gas.

Harmonization of Electricity and Gas Standards.

Information source: INOGATE Technical Secretariat Regional Work Plan

4 Results of implementation of the Road Maps and Action Plans in the PCs

4.1 Georgia

Current situation

Georgia signed in 2014 an Association Agreement with the EU, introducing a Deep and Comprehensive Free Trade Area (DCFTA), allowing Georgia’s enterprises access to the EU market. Georgia is candidate member of the Energy Community. Part of the Association Agreement is the gradual adoption and implementation of about 350 trade-related EU Directives and Regulations, together with related supporting ENs, and implementation of the Energy Community Acquis, involving the adoption of 12 EU Directives and Regulations together with adoption of a package of international and European electricity and gas standards as national standards. Of the Energy Community Acquis Georgia has transposed 5 EU Directives and 1 EU Regulation, in the fields of pressure equipment, simple pressure vessels, eco-design (including electric motors), energy labelling, and public procurement. The related ENs have not yet been adopted.

Regulatory system

Georgia adopted in 2012 a regulatory system fully compliant with EU accepted practices, comprising mandatory technical regulations supported by voluntary standardisation.

International standardisation connections

The (non-governmental) National Agency for Standardisation and Metrology acting as the National Standardisation Body of Georgia is:

- correspondent member of ISO, participating in 1 TC, i.e. ISO/TC 142;
- associate member of IEC, participating in 4 TCs in the electricity sector, i.e. IEC/TCs 17, 42, 44 and 77;
- affiliate member of CEN, but not participating in its TCs;
- affiliate member of CENELEC, but not participating in its TCs;
- not participating in EASC or any activity thereof.

Changes in the actual situation are not expected at short notice.
Compliance of standardisation system with generally accepted international and European principles

National standardisation activities

Georgia has established a national Electrotechnical Committee on electricity, which also covers gas products and equipment (TC 1), allowing it to follow the work of international and European standardisation and adopt the required priority electricity and gas standards.

Georgia has completed:
- the development of the 2015 Work Plan of the national Electrotechnical Committee (TC 1);
- the ITS project transfer and implementation of 12 EASC interstate gas standards;
- the ITS project transfer and translation of 100 international and European oil and gas standards;
- the implementation of the 2014 National Standardisation Plans with regard to the adoption of generally accepted electricity and gas standards from the list of the Energy Community Secretariat;
- the preparation and approval of the 2015 National Standardisation Plans for generally accepted electricity and gas standards from the list of the Energy Community Secretariat;
- the ITS project aimed at adoption of gas standards: Seminar Tbilisi Regional Gas Infrastructure and EN 1594.

Adoption and implementation of standards

Number of standards adopted for the first time\(^2\) from the Energy Community Secretariat’s list (comprising 319 electricity and 132 gas standards)

By the end of 2015 Georgia had adopted 129 priority gas standards of the 132 that are listed and 226 priority electricity standards of the 319 that are listed. Georgia has made a start with the application of the adopted priority gas standards to its gas sector.

Georgia has decided to begin with the introduction of European gas functional standards in GOGC and GGTC. In the framework of CWP GE 03 & 04 ITS experts conducted the normative reference analysis of the European gas functional standards for transmission gas infrastructure. According to the result of the normative reference analysis Georgia needs to adopt a minimum of 110 international and European gas standards.

To speed up the implementation of gas standards Georgia has decided to set up a new Gas TC on the basis of the Gas Working Group of the National Electrotechnical Committee of Georgia (TC 1). The structure of this TC will be similar to that of TC 44 of Moldova.

In 2016 Georgia plans to adopt 90 of the remaining 93 priority electricity standards and 1 of the remaining 3 priority gas standards.

By the end of 2016 Georgia is expected to have adopted almost all standards from the Project’s list of priority gas and electricity standards.

See Chapters 5 and 6 for more detailed information on the adoption of standards.

Directives and Regulations

Georgia plans to implement the package of EU Directives and Regulations required to fulfil the provisions of the DCFTA within the next 10 to 15 years.

Georgia considers to transpose and implement the remaining 7 Directives in 2016.

\(^2\) For the number of standards adopted for the second time (e.g. relevant for updates) please see the relevant RM.
4.2 Moldova

Current situation

Moldova signed in 2014 an Association Agreement with the EU introducing a Deep and Comprehensive Free Trade Area (DCFTA) allowing the Moldovan economy to catch up with the EU in terms of competitiveness. Already in 2009 Moldova became signatory to the Energy Community Treaty. Part of the Association Agreement is the adoption and implementation of about 350 EU Directives and Regulations, together with related supporting ENs, and implementation of the Energy Community Acquis, involving the adoption of 13 EU Directives and Regulations together with a package of international and European electricity and gas standards as national standards. Of the Energy Community Acquis Moldova has implemented modified versions of 5 EU Directives, in the fields of pressure equipment, gas appliances, low voltage equipment, EMC and explosive atmospheres. Moldova has also adopted about 80% of the ENs supporting these EU Directives. In the fields of simple pressure vessels, and measuring instruments all supporting ENs already have been adopted and for machinery more than 80%, anticipating the implementation of the relevant EU Directives currently under development.

Regulatory system

Moldova adopted in 1995 and in 2006 a regulatory system compliant with EU accepted practices, comprising mandatory technical regulations supported by voluntary standardisation.

International standardisation connections

The (non-governmental) National Institute for Standardisation acting as the National Standardisation Body of Moldova is presently:
- correspondent member of ISO, participating in 42 TCs, including 3 TCs for the gas sector, i.e. ISO/TCs 11, 67 and 193;
- associate member of IEC, participating in 3 TCs, including 1 TC for the electricity sector, i.e. IEC/TC 13;
- affiliate member of CEN and CENELEC, but does not participate in their TCs;
- member of EASC, participating in 1 of its Interstate TCs for the gas sector, i.e. ITC 052 – Natural Gas.

Moldova is considering ways of becoming more involved in the work of ISO, IEC, CEN and CENELEC, and establishing a system of national TCs following international and European standardisation work according to European practice.

Compliance of standardisation system with generally accepted international and European principles

National standardisation activities

Moldova intends to establish a national TC for the energy sector, allowing it to follow the work of international and European standardisation and adopt the required priority electricity and gas standards.

Moldova has completed:
- the implementation of 12 EASC interstate gas standards transferred by the ITS project;
- the implementation of the 2014 National Standardisation Plans with regards to the adoption of generally accepted electricity and gas standards from the list of the Energy Community Secretariat;
- the preparation and approval of the 2015 National Standardisation Plans for generally accepted electricity and gas standards from the list of the Energy Community Secretariat;
- the following ITS projects aimed at adoption of electricity standards: Regional Seminar Event in Brussels, Workshop and Study Visit to London;
- the following ITS projects aimed at adoption of gas standards: Study Visit to Germany, Regional Seminar Event in Brussels, Workshop and Study Visit to London, Seminar Tbilisi Regional Gas Infrastructure and EN 1594;
- the establishment of technical committees TC 44 “Natural gas. Gas infrastructure” and TC 45 “Electric Power” (AHEF 073 MD);
- the participation of the members of TC 44 “Natural gas. Gas infrastructure” in Regional Seminar Tbilisi Regional Gas Infrastructure and EN 1594;
- the preparation of the Work Plan of TC 44 on the basis of the results of the Regional seminar in Tbilisi “Gas Infrastructure and EN 1594”.

Adoption and implementation of standards

Number of standards adopted for the first time\(^2\) from the Energy Community Secretariat's list (comprising 319 electricity and 132 gas standards)

By the end of 2015 Moldova had adopted virtually all priority electricity and gas standards (see Tables 2 and 3). A main problem for the implementation of the European and international gas and electricity standards, according to Moldova NSB opinion, is the elimination of disputed standards and the adoption of the standards providing effective implementation of the European functional gas standards and general electricity standards.

The solution of this problem will be one of the priority tasks of the national Technical Committee on standardisation TC 44 “Natural Gas. Gas infrastructure” and TC 45 “Electric Power” established with support provided by the Project.

See Chapters 5 and 6 for more detailed information on the adoption of standards.

Directives and Regulations

By the end of 2016 Moldova is expected to have implemented EU Regulation 1025/2012 on European standardisation into the draft new “Law on standardisation”. This law has already passed 1st hearing in Parliament.

By the end of 2016 Moldova is also expected to have implemented the 8 remaining EU Directives required as member of the Energy Community

By the end of 2018 Moldova is expected to have implemented fully compliant versions of all 13 remaining EU Directives and Regulations required as member of the Energy Community;

4.3 Ukraine

Current situation

Ukraine signed in 2014 an Association Agreement with the EU introducing a Deep and Comprehensive Free Trade Area (DCFTA). Already in 2010 Ukraine became signatory to the Energy Community Treaty. Part of the Association Agreement is the adoption and implementation of about 350 EU Directives and Regulations, together with related ENs, and implementation of the Energy Community Acquis, involving the adoption of 13 EU Directives and Regulations together with a package of international and European electricity and gas standards as national standards. Of the Energy Community Acquis Ukraine has implemented modified versions of 5 EU Directives, in the fields of pressure equipment, simple pressure vessels, gas appliances, measuring instruments and explosive atmospheres, and 4 full compliant versions of EU Directives, in the fields of machinery, low voltage equipment, EMC, and energy labelling. Ukraine has adopted part of the ENs supporting these EU Directives.
Regulatory system

Ukraine adopted in 2015 a regulatory system fully compliant with EU accepted practices, comprising mandatory technical regulations supported by voluntary standardisation.

International standardisation connections

The Ukrainian Research and Training Centre of the Problems of Standardisation, Certification and Quality (SE UkrNDNZ) is responsible for the membership of international and European standardisation organisations and is:

- full member of ISO, actively participating in 10 TCs for the gas sector, i.e. ISO/TCs 5, 11, 30, 58, 67,109, 158, 161, 185 and 193;
- full member of IEC, actively participating in 14 TCs for the electricity sector, i.e. IEC/TCs 2,13, 14, 20, 28, 31, 33, 38, 44, 57, 61, 77, 81 and 95;
- affiliate member of CEN, participating in 1 TC, i.e. CEN/TC 110;
- affiliate member of CENELEC, but is not participating in its TCs;
- member of EASC, participating in 8 of its Interstate TCs for the electricity sector, and 5 of its Interstate TCs for the gas sector.

Ukraine has recently renewed its affiliate membership of CEN and CENELEC.

Ukraine is considering ways of becoming more involved in the work of ISO, IEC, CEN and CENELEC, and support its national TCs following international and European standardisation work according to European best practice.

Compliance of standardisation system with generally accepted international and European principles

National standardisation activities

Ukraine has established 15 national TCs in the electricity sector and 8 in the gas sector, of which the management is based on Soviet style management rather than European best practice.

Ukraine has completed to date:

- the establishment of an independent National Standardisation Body and informing ISO and EASC thereof;
- the implementation of 12 EASC interstate gas standards transferred by the ITS project;
- ITS project transfer and translation of 100 international and European oil and gas standards;
- the implementation of the 2014 National Standardisation Plan with regard to the adoption of generally accepted electricity standards from the list of the Energy Community Secretariat;
- the implementation of the 2014 National Standardisation Plan with regard to the adoption of priority gas standards from the list of the Energy Community Secretariat;
- the approval and implementation of the 2015 National Standardisation Plan with regard to the adoption of generally accepted gas standards from the list of the Energy Community Secretariat;
- the following ITS project aimed at the adoption of gas standards: Seminar Tbilisi Regional Gas Infrastructure and EN 1594.

Adoption and implementation of standards

Number of standards adopted for the first time from the Energy Community Secretariat’s list (comprising 319 electricity and 132 gas standards)
By the end of 2015 Ukraine had adopted 78 gas and 174 electricity standards from the Project’s priority list of gas and electricity standards. Ukraine adopts standards by the reprinting and translation method to reduce problems with their implementation. Ukraine plans to adopt targeted gas and electricity standards by the end of 2016 (gas) and 2017 (electricity).

Currently the main goal of Ukraine however is the implementation the European gas functional standards. In the frame of CWP 05 Ukraine plans to adopt and implement the new edition of the European gas functional standards for the gas transmission infrastructure. ITS expert and the members of Working / Learning Groups defined the standards as a requirement for the full implementation of priority European gas functional standards. Ukraine needs to develop a program for the adoption of these standards.

See Chapters 5 and 6 for more detailed information on the adoption of standards.

Directives and Regulations

Over the next 10 years Ukraine plans to adopt all of the approximately 350 EU Directives and Regulations that are part of the Association Agreement. No separate timeframe is given for full implementation of the remaining 9 EU Directives and Regulations as required for signatories of the Energy Community.

4.4 Kyrgyzstan

Current situation

Kyrgyzstan signed a Partnership and Cooperation Agreement with the EU in 1995, but also applied for membership of the Customs Union with Russia, Belarus and Kazakhstan. Although Kyrgyzstan is not (yet) applying for membership of the Energy Community, it has made a start with the adoption of the 13 EU Directives and Regulations together with a package of international and European electricity and gas standards as national standards that is required for membership of the Energy Community. Of the Energy Community Acquis Kyrgyzstan has implemented modified versions of 4 EU Directives, in the fields of machinery, low voltage equipment, EMC, and measuring instruments, however without the supporting ENs.

Regulatory system

Kyrgyzstan adopted in 2004 a regulatory system partly compliant with EU accepted practices, comprising mandatory technical regulations supported by voluntary standardisation. Existing mandatory standards will be gradually replaced by technical regulations supported by voluntary standardisation during a transitional period.

International standardisation connections

The (governmental) Centre for Standardization and Metrology acting as the National Standardisation Body of Kyrgyzstan is presently:
- associate member of ISO, but not participating in its TCs;
- member of the IEC programme for partner countries, participating in 1 TC, i.e. IEC/TC 13;
- not participating in any of the programmes or activities of CEN;
- Partner Standardisation Body of CENELEC;
- member of EASC, participating in 5 of its Interstate TCs for the electricity sector and 2 of its Interstate TCs for the gas sector.

Kyrgyzstan will keep the existing format of relations with ISO and IEC, and is considering ways of becoming more involved in the work of CEN and CENELEC, with the aim to ensure direct participation of at least its national TCs in the fields of electricity and gas in international and European standardisation work according
to European best practice.

**Compliance of standardisation system with generally accepted international and European principles**

**National standardisation activities**

Kyrgyzstan has established 1 national TC in the electricity sector, and 1 TC in the oil and gas sector, which is not active.

**Kyrgyzstan has completed:**

- the development of the 2015 Work Plan of the National Electrotechnical Committee;
- the implementation of 12 EASC interstate gas standards transferred by the ITS project;
- the implementation of the 2014 National Standardisation Plans with regards to the adoption of priority electricity and gas standards from the list of the Energy Community Secretariat;
- the preparation and approval of the 2015 National Standardisation Plans with regards to the adoption of priority electricity and gas standards from the list of the Energy Community Secretariat.

**Adoption of standards**

**Number of standards adopted for the first time**\(^2\) from the Energy Community Secretariat’s list (comprising 319 electricity and 132 gas standards)

By the end of 2015 Kyrgyzstan had adopted 42 gas standards and 47 electricity standards of the lists of priority standards. All 42 European and international gas standards adopted in Kyrgyzstan were developed on the basis of the translations of gas standards made within the framework of INOGATE program. Unfortunately, Kyrgyzstan had to suspend its cooperation with CEN/CENELEC as a Partner Standardization Body, which is assumed preventing the possibility of Kyrgyzstan to receive the European standards for adoption.

See also Chapters 5 and 6 for more detailed information on the adoption of standards.

**Directives and Regulations**

Due to its interest in becoming a member of the Customs Union, Kyrgyzstan is not expected to adopt the full set of 13 EU Directives and Regulations, or even strive for full approximation of the 4 EU Directives already implemented. It is also unsure whether adoption of European harmonised standards supporting the relevant EU Directives will be achieved.

### 4.5 Azerbaijan

**Current situation**

The EU and Azerbaijan signed a Memorandum of Understanding on cooperation in the field of energy in 2006, identifying goals for the use of advanced international standards and codes of best practice, such as ‘promoting the harmonisation of technical norms and standards in Azerbaijan’s hydrocarbon sector with EU industrial practices’. Azerbaijan has presently the status of observer in the Energy Community and implements the package of standards of the list elaborated by the Energy Community’s Secretariat.

**Regulatory system**

Azerbaijan plans to introduce a system of technical regulations comparable with that of the EU, as indicated by the draft law on technical regulations. This law will pave the way for the adoption of technical regulations following the principles of the new approach but not in an equivalent way, as content and structure will differ.
International standardisation connections

The State Committee for Standardization, Metrology and Patents, acting as the National Standardisation Body of Azerbaijan is presently:
- full member of ISO, participating in 12 TCs, including 1 TC for the gas sector, i.e. ISO/TC 67;
- member of the IEC Affiliate Country Programme, but not participating in its TCs;
- affiliate member of CEN, but not participating in its TCs;
- not participating in any of the programmes or activities of CENELEC;
- member of EASC, participating as an observer in 3 of its Interstate TCs for the electricity sector and in 4 of its Interstate TCs for the gas sector.

It is Azerbaijan’s strategic goal to:
- expand participation as observer in 14 to 18 ISO/TCs dealing with gas by 2018; and
- become associate member of IEC by 2016; and
- ensure participation as observer in 8 TCs dealing with priority electricity standards by 2018;
- obtain affiliate membership of CENELEC by 2016;
- expand participation in 3 EASC Interstate TCs in the electricity sector and to set up a national TC to follow and participate as observer in their activities.

Compliance of standardisation system with generally accepted international and European principles

National standardisation activities

Azerbaijan has not yet established national TCs for the electricity and gas sector. At present national standards are not equivalent to international standards. International standards are not adopted as national standards.

Interstate standards are adopted automatically as from the date of the official receipt of the texts of the standards.

Azerbaijan has completed:
- the establishment of a national TC for metrology (TC 13);
- the implementation of 12 EASC interstate gas standards transferred by the ITS project;
- the implementation of the 2014 National Standardisation Plan with regards to the adoption of the priority electricity standards from the list of the Energy Community Secretariat;
- the preparation and approval of the 2015 National Standardisation Plan for the priority electricity standards from the list of the Energy Community Secretariat;
- the following ITS project aimed at the adoption of gas standards: Seminar Tbilisi Regional Gas Infrastructure and EN 1594.

Adoption of standards

Number of standards adopted for the first time\(^2\) from the Energy Community Secretariat’s list (comprising 319 electricity and 132 gas standards)

By the end of 2015 Azerbaijan had adopted 12 gas standards, of which all 12 are Interstate gas standards. These standards were developed on the basis of the translations of gas standards made within the framework of the INOGATE programme.
Up to 2015 an increasing number of electricity standards have been identified independently by Azerbaijan as ‘priority’ standards, but so far only 1 standard from the list has been adopted.

See also Chapters 5 and 6 for more detailed information on the adoption of standards.

**Directives and Regulations**

Azerbaijan does not have the intention yet to transpose EU Directives and Regulations. However, Azerbaijan expects to adopt a ‘Law on technical regulations’ soon, comprising a framework for the application of EU New Approach principles to national technical regulations.

### 4.6 Uzbekistan

**Current situation**

Uzbekistan signed a Partnership and Cooperation Agreement with the EU in 1996. Uzbekistan is not a member of the Energy Community, but has showed interest in participating with the EU in the energy sector as a result of which it has signed a Memorandum of Understanding on Cooperation in the field of Energy with the EU in 2011, entailing adoption of the Energy Community Acquis consisting of 13 EU Directives and Regulations and related package of 319 electricity and 132 gas standards.

**Regulatory system**

At present Uzbekistan is in the process of reforming its technical regulations system which has its origin in the Law on technical regulations of 2009. The Law provides for development and adoption of 27 technical regulations of which 5 have been completed and adopted so far, and a system of voluntary standards that can be used in relation to these regulations. As a result, mandatory standards still apply to the majority of products and services in Uzbekistan.

**International standardisation connections**

The (governmental) Agency for Standardization, Metrology and Certification, acting as the National Standardisation Body of Uzbekistan is presently:

- full member of ISO, participating in 7 TCs, all of which not related to the electricity or gas sector;
- affiliate member of IEC (since November 2015);
- not participating in any of the programmes or activities of CEN, but considering establishing official relationships, including a license agreement;
- not participating in any of the programmes or activities of CENELEC, but considering establishing formal relationships, including a license agreement;
- member of EASC, participating in 5 of its Interstate TCs for the electricity sector and in 4 of its Interstate TCs for the gas sector.

**Compliance of standardisation system with generally accepted international and European principles**

**National standardisation activities**

Uzbekistan has established 3 national TCs for the electricity and oil and gas sectors, of which the management is based on Soviet style management rather than European best practice.

Uzbekistan intends to delegate participation in 3 of the Interstate TCs for the electricity sector to the responsible national TC.

**Uzbekistan has completed:**

- development of the 2015 Work Plan of the National Electrotechnical Committee;
- implementation of 12 EASC Interstate gas standards transferred by the ITS project.

**Adoption of standards**

**Number of standards adopted for the first time** from the Energy Community Secretariat's list (comprising 319 electricity and 132 gas standards)

By the end of 2015 Uzbekistan had adopted
- 15 gas priority standards;
- 44 priority electricity standards;

Uzbekistan included 5 priority gas standards in the National Standardisation Plan of 2016.

**Directives and Regulations**

Presently the Law on technical regulations of 2009 does not allow transposition of EU Directives and Regulations or even adoption of the principles of the EU New Approach, although there are similarities between the technical regulations elaborated by Uzbekistan and those of the EU.

### 4.7 Tajikistan

**Current situation**

Tajikistan signed a Partnership and Cooperation Agreement with the EU in 2004, with effect from 2010. Although not formally engaged in the European Neighbourhood Policy, it participates in projects implemented under this policy. Although Tajikistan does not participate in the Energy Community and also has no plans to join the Treaty in the near future it has taken the decision to implement a package of EU Directives, resulting in the implementation of 2 EU Directives in the fields of low voltage equipment and gas appliances. It is not clear in which way and to which extent the corresponding national regulations are equivalent to these EU Directives.

**Regulatory system**

At present Tajikistan is in the process of reforming its technical regulations system which has its origin in the Law on technical regulations of 2009, which allows adoption of the principles of the EU New Approach and provides for a system of voluntary standards that can be used in relation to adopted regulations. However, still the major part of technical regulations is comprised of mandatory standards. Existing mandatory standards will be gradually replaced by technical regulations supported by voluntary standardisation during a transitional period and dependant of the adoption of technical regulations based on the Law of 2009. Presently, Tajikistan has not yet developed or adopted any regulation in the electricity or gas sector which would also be required for the transition of related mandatory into voluntary supporting standards.

**International standardisation connections**

The (governmental) Agency of Standardization and Metrology and Trade Inspection acting as the National Standardisation Body of Tajikistan is presently:

- correspondent member of ISO, participating in 11 TCs, of which 1 TC related to energy, i.e. ISO/TC 242;
- not participating in any of the programmes or activities of IEC, but considering associate membership;
- not participating in any of the programmes or activities of CEN, but considering a license agreement;
- not participating in any of the programmes or activities of CENELEC, but considering a license agreement;
- member of EASC, participating in 5 of its Interstate TCs for the electricity sector and 1 of its Interstate TCs for the gas sector.

Tajikistan plans to ensure participation in 3 of 18 ISO/TCs dealing with generally applicable gas standards.

Tajikistan intends to become IEC associate member to ensure participation in 10 of 29 IEC/TCs dealing with priority electricity standards.

**Compliance of standardisation system with generally accepted international and European principles**

**National standardisation activities**

Tajikistan has established 1 national TC for the electricity sector that is also dealing with gas standards. By 2018 Tajikistan intends to have established new TCs in the electricity and gas sectors compliant with international and European good practice to ensure adoption of recommended standard of the list of the Energy Community Secretariat.

**Tajikistan has completed:**

- the implementation of 12 EASC interstate gas standards transferred by the ITS project;
- the implementation of the 2014 National Standardisation Plan with regards to the adoption of priority electricity standards from the list of the Energy Community Secretariat;
- the preparation and approval of the 2015 National Standardisation Plan for priority gas standards from the list of the Energy Community Secretariat;
- the following ITS project aimed at the adoption of gas standards: Seminar Tbilisi Regional Gas Infrastructure and EN 1594.

**Adoption of standards**

**Number of standards adopted for the first time** from the Energy Community Secretariat’s list (comprising 319 electricity and 132 gas standards)

By the end of 2012 Tajikistan had adopted:

- 9 general electricity standards;
- 3 priority electricity standards (ITS recommended);
- 1 priority gas standard (ITS recommended).

In 2014 Tajikistan adopted 11 priority gas standard (ITS recommended). All these European and international gas standards were Interstate gas standards. These standards were developed on the basis of the translations of gas standards made within the framework of the INOGATE programme.

In 2015 Tajikistan has adopted the main functional gas standard EN 1594 for main pipelines.

Tajikistan included in the National Standardisation Plan for 2016 4 standards, two of which, EN 12186 and EN 1776, were considered in detail during the regional workshop in Tbilisi in 2015.

See also Chapters 5 and 6 for more detailed information on the adoption of standards

**Directives and Regulations**

For the convergence of technical regulation systems in the gas and power sector Tajikistan developed and adopted the following national technical regulations corresponding to the European Directives of the New Approach:

1. Safety of low voltage equipment (Resolution of the Government of the Republic of Tajikistan of 02.04.2015, № 189);
2. Safety of devices operating on gaseous fuels (Resolution of the Government of the Republic of Tajikistan of 27.04.2015, № 236);

3. Safety of liquefied petroleum gases (Resolution of the Government of the Republic of Tajikistan of 04.03.2015, № 136.)

4.8 Armenia

Current situation

Armenia signed a Partnership and Cooperation Agreement with the EU in 2004. Given the decision taken by Armenia in the beginning of September 2013 to join the Customs Union with Russia, Belarus, Kazakhstan and Kyrgyzstan, the steps required to enter into an Association Agreement introducing a Deep and Comprehensive Free Trade Area (DCFTA) with the EU to become effective are not pursued at this moment.

Armenia has presently observer status in the Energy Community, but if accepted as member, it will need to transpose a package of 13 EU Directives and Regulations interrelated with the gas and electricity sectors from the list of the Energy Community Secretariat, of which it has adopted 4 modified version of EU Directives in the fields of low voltage equipment, EMC, gas appliances and transport of dangerous goods. The related supporting standards have not yet been adopted.

As member of the Customs Union Armenia has the obligation of transposing 262 regulations. Part of this set of regulations are modified versions of 6 EU Directives, in the fields of machinery, pressure equipment, low voltage equipment, EMC, gas appliances, and explosive atmospheres.

Regulatory system

At present Armenia is in the process of reforming its technical regulations system laid down in the Law on technical regulations of 2012, which allows the adoption of the principles of the EU New Approach and provides for a system of voluntary standards that can be used in relation to adopted regulations. However, still the major part of technical regulations is comprised of mandatory standards and certification. Existing mandatory standards and certification requirements will be gradually replaced by technical regulations supported by voluntary standardisation and certification (except for the cases indicated by EU technical legislation) during a transitional period and dependant of the adoption of technical regulations based on the Law of 2012.

International standardisation connections

The (governmental) National Institute of Standards acting as the National Standardisation Body of Armenia is presently:
- full member of ISO, participating in 66 TCs, including 6 TCs for the gas sector, i.e. ISO/TCs 58, 67, 158, 182, 193 and 252;
- member of the Affiliate Country Programme of IEC;
- affiliate member of CEN, participating in CEN/TC 234;
- not participating in any of the programmes or activities of CENELEC;
- member of EASC, participating in 5 of its Interstate TCs for the electricity sector and in 2 of its Interstate TCs for the gas sector.

Armenia plans to ensure its participation in 9 of 18 ISO/TCs dealing with priority gas standards.

Armenia intends to become an IEC associate member by 2016 to ensure participating in 28 of 29 IEC/TCs dealing with generally accepted electricity standards.
Compliance of standardisation system with generally accepted international and European principles

National standardisation activities

Armenia has established 3 national TCs for the electricity sector and 1 TC for the gas sector, of which the management does not generally comply with European best practice.

Armenia has completed:
- the ITS project transfer and translation of 100 international and European oil and gas standards;
- the inventory of available EU technical regulations and related standards subject to harmonisation with national technical legislation for the purpose of preparing a new national technical regulation on small hydro power plants;
- the preparation of the list of international and European standards for small hydro power plants for testing and verification purposes (ITS project AHEF AM 063);

Adoption of standards

Number of standards adopted for the first time from the Energy Community Secretariat’s list (comprising 319 electricity and 132 gas standards)

By the end of 2015 Armenia had adopted:
- 44 priority electricity standards;
- 11 priority gas standards.

Armenia has included in the National Standardisation Plan of 2016:
- 18 priority electricity standards
- 20 priority gas standards

See also Chapters 5 and 6 for more detailed information on the adoption of standards.

Directives and Regulations

In the period between 2015 and 2018 Armenia intends to transpose the remaining 8 EU Directives and 1 EU Regulation, including the technical regulations of the Customs Union. It is to be noted that all transposed regulations will be modified versions of EU Directives and Regulations. By the end of 2018 Armenia plans to have adopted all 13 EU Directives and Regulations of the list of the Energy Community Secretariat. The level of compliance will need to be clarified in the process of their implementation.

5 Adoption of priority gas standards in the PCs

The common list of priority gas standards for the PC is based on the following three documents:

- “Generally applicable standards – natural gas” developed by the Energy Community;
- List of MARCOGAZ “EN and ISO standards for use in European gas infrastructure”;
- Priority gas standards list prepared by the INOGATE Project “Harmonisation of Gas and Oil Technical Standards and Practices in Eastern Europe and the Caucasus”.

This list presently comprises 132 priority gas standards, and includes both CEN and ISO standards. Some countries, for example Ukraine, have a few additional standards. The current situation with adoption of priority gas standards in PCs is presented in Table 2 below.

Moldova and Georgia have decided to adopt all priority standards and they now only need to adopt only a few standards in 2016.
The creation of the Technical Committee in Georgia did not only lead to the adoption of all priority gas standards, but also updated the last version published. Georgia was one of the first countries among the PCs that widely used the endorsement method for the adoption of the international and European standards. Now Georgia has moved on to a new stage of harmonisation: implementation of the European and international standards in the day-to-day gas company practice. An important task of this stage will be the examination by leading experts of the gas companies of the main European functional standards, therefore the gas companies should have translations of standards in regional or national language at their disposal. An ideal decision would be the reprinting of a standard with a national introduction and reference appendix in the regional or national language.

Moldova has adopted the majority of standards in the Romanian language, using standards of Romania. Only recently adopted European standards have been adopted in the source language, for example, the main European functional gas standard EN 1594:2013. A main problem for the implementation of the European and international gas standards, according to Moldova NSB opinion, is the elimination of disputed standards. The solution of this problem will be one of priority tasks of the national technical committee on standardisation TC 44 “Natural Gas. Gas infrastructure” established with support provided by the Project.

Kyrgyzstan has made very effective use of the translations of 112 oil and gas standards made within the framework of INOGATE program. All 42 international gas standards adopted in Kyrgyzstan were developed on the basis of the mentioned translations. Kyrgyzstan also adopted 15 oil standards. Thus, Kyrgyzstan used 57 of the 112 translations of oil and gas standards. Unfortunately, Kyrgyzstan had to suspend its cooperation with CEN as a Partner Standardization Body, which is assumed preventing the possibility for Kyrgyzstan to use the translations of European gas standards.

Armenian Gas Technical Committee is an observer in the European Technical Committee CEN/TC 234. It has an obligation to adopt all the standards of this TC. In connection with the change of leadership of the Armenian TC, the adoption terms of the gas standards have been changed. 20 European gas standards are included in the National Standardisation Plan for 2016.

Kazakhstan adopted the gas standards in accordance with the Program on Technical Regulation and Creation of Quality Infrastructure in the Republic of Kazakhstan for 2010-2014, approved by the Provisions of the Government of the Republic of Kazakhstan on October 22, 2010, № 1100. Upon completion of this program, 80 gas standards were adopted in Kazakhstan. All 12 standards adopted in 2014 were adopted on the basis of translations made within the framework of the INOGATE program.

At the end of 2012 Belarus adopted 41 standards, but in the period 2013-2015 Belarus adopted only 4 gas standards.

Azerbaijan, Uzbekistan, and Tajikistan adopted and implemented 12 Interstate standards prepared with support provided by the Project. It is difficult for these countries to adopt the international standards without assistance, even with the presence of official translations into Russian. The reasons are conflicting legislation and existing stereotypes. But at the same time, the countries can adopt standards on the basis of the Russian translation, if necessary. For example, Tajikistan has adopted the main functional gas standard EN 1594. Of this standard, all translations of standards from the section «Normative references» have received the status of official translations and are accessible to users. Tajikistan included in the National Standardisation Plan for 2016 four standards, of which EN 12186 and EN 1776 were considered in detail during the regional workshop in Tbilisi in 2015.

Thus, translation of standards into Russian for all PCs provides the accelerated studying by their experts, adoption as interstate or national standards, and implementation by gas companies.
Table 2: Summary of adopted priority gas standards in the Partner Countries

<table>
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<tr>
<th>#</th>
<th>COUNTRY</th>
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6 Adoption of priority electricity standards in PCs

The document “Generally applicable standards – Electricity” was prepared by the Energy Community in 2007, and initially listed 190 electricity standards and series of electricity standards, which made its direct use for harmonisation difficult. Significant work has been done to review the original list of standards and update it with current information about those standards. As a result, the original list of 190 was updated, resulting in a list of 319 standards. The results of the adoption of electricity standards are shown in Table 3 below.

Moldova has already completed adoption of 304 standards. Thus, TC 45 "Electricity" (established with assistance of the Project) needs only time to adopt new editions of standards. A main goal for the TC will be in relation to the elimination of conflicting standards. This will allow to proceed with the implementation of the European standards within a short period.

By the end of 2016 Georgia plans to complete adoption of 316 standards. On December 1st, 2015, 226 standards had been adopted. The remaining 90 standards will be adopted in 2016. All standards will be adopted by the endorsement method.

Up to now Ukraine has adopted standards basically by the translation method into Ukrainian or Russian (Interstate standards). On December 1st, 2015, 129 from the 151 standards planned were adopted. The process of adoption of standards will be accelerated, as it is planned to adopt EU Directives with simultaneous adoption of the standards harmonised with these directives by endorsement method.

By the end of 2015 Kyrgyzstan had adopted 47 electricity standards. Although a respectable result, it is unlikely that the country is able to adopt the remaining 92 standards within the 2016-2018 period without international assistance.

By the end of 2015 Armenia had adopted 44 standards, but Armenia didn’t adopt any electricity standards in 2015.

By the end of 2014 Kazakhstan had adopted 95 standards. In 2015 Kazakhstan adopted only 2 standards.

Belarus finds itself in a situation similar to that of Kazakhstan and Armenia with regard to the adoption of electricity standards.

It is necessary to note the successes of Azerbaijan which started to adopt the international electricity standards during the last two years.

It is noted that all PCs, except for Georgia, Moldova, and Ukraine, adopt standards of IEC, and not standards of CENELEC.
Table 3: Summary of adopted priority electricity standards in the Partner Countries

<table>
<thead>
<tr>
<th>#</th>
<th>COUNTRY</th>
<th>Before 2013</th>
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7 Conclusion

The main purpose of using harmonised standards is to remove technical barriers to trade. This applies to the energy sector as well and in particular for the INOGATE PCs this sets the scene for further modernisation of their respective electricity and gas infrastructure and to increase competitiveness.

Component B Electricity and Gas of the “INOGATE Technical Secretariat (ITS) and Integrated Programme in support of the Baku Initiative and the Eastern Partnership energy objective” has helped PCs building up their capacity to gradually harmonise their standardisation system with that of European best practice by elaborating standardisation road maps and action plans. The resulting actions by the PCs of transposing and adopting the required packages of international and European priority electricity and gas standards from the list elaborated by the Energy Community Secretariat have exceeded expectations. Right from its start in 2012 the PCs have commenced transposing and adopting these standards and have continued doing so until finalisation of the technical support within the framework of the programme.

Specifically the following achievements are to be highlighted:

Priority standards:

1. Georgia, Moldova, and Ukraine are leaders in harmonisation of standards among the PCs.
2. Moldova has adopted all standards from “Generally applicable standards – Electricity” prepared by the Energy Community.
3. Georgia and Moldova have practically adopted all standards from the list of gas standards offered by the Project.
4. Georgia, Moldova, and Ukraine have chosen as priority standards for implementation the functional standards and European gas standards connected with them.
5. For effective implementation of the European gas standards it is necessary to organise training of leading experts of the gas companies, using this training in preparation of qualitative translations of standards.
6. For effective adoption and implementation of the international gas standards it is necessary to have in each PC the active Technical Committees, legislative possibility to adopt standards by reprinting method with translation on regional or national language as reference annex, and to have the effective mechanism of elimination of conflicting standards.
7. As result of the regional seminar AHEF GE118, PCs formulating the overall concept of how to implement EN functional standards with the help of foreign donors (e.g. the INOGATE programme), arrange the harmonisation of standards with the purpose of their implementation and application of European and international standards in the gas sector of the PCs.
Key theses:

1. From the point of view of the PCs, the main part of harmonising standards is to arrange active studying of standards by the staff at gas companies, design organisations, administrative bodies and other organisations that will apply standards in their activities. One way to achieve this is to create working / learning groups for each priority area, for instance, functional standards. The work of these groups will focus on achieving a national standard harmonised with the international standard or at least translation of the standard into the national or regional language recognised by all participants in the gas sector. Using a regional language is preferable for a standard of a common business interest for the PCs, such as cross-border trade. In this case, working groups should be on a regional level, in order to achieve a common understanding of standards and ensure a coordinated implementation and uniform application. A training coordinator plays a key role in this process, which should, in addition to the experience in organising such training process, also enjoy the trust of the professionals trained and be aware of the specifics of the gas transportation sector, as well as legislative and regulatory requirements of the countries participating in the project.

2. Achieving a deep understanding of the main provisions of the standard. At this stage the primary task is to provide answers to questions arising or disagreement among the trained professionals. The main tools at this phase are consultations and topical working meetings and trainings based on the identified issues and contradictions. It is important to form, under the guidance of an INOGATE expert, a core group consisting of qualified experts of gas transmission companies with understanding and experience of implementation of standards in their countries, which will be able to apply constant effort on harmonisation and implementation of standards in their countries.

3. Preparation of agreed national or regional standards. At this stage, the professionals trained, together with TC members, identify conflicting standards and other regulatory documents. Normative references and other related standards are analysed. Standards are identified that should be translated additionally for implementation of major standards, at least in a reference version.

4. Implementation by the gas company. Identifying the range of the company’s standards that need to be modified in order to implement the new standard. Determining the list of related standards to be implemented simultaneously. Preparing an action plan for the implementation of European standards, taking into account the peculiarities of each gas company, adaptation of internal standards in view of implementation of the European standards and the cancellation of the old GOST standards.

5. Monitoring of the implementation of the standard. Transfer of the European experience in resolving issues arising as a result of introduction and application of a standard (e.g. by German companies). This can be done as part of workshops or study tours. When organising these events the key issue for the trainees, with the moderator’s assistance, is to formulate the specific list of the event’s objectives (a joint preparation of terms of reference). Studying the experience of international technical committees on standardisation.
6. Technical support of the gas companies in standards’ application:
   a. Assistance in creation of a standardisation department (service) in gas companies;
   b. Gas company staff training and retraining;
   c. Assistance in the establishment of consultations with professional European associations.

7. Increase of efficiency profile gas TCs:
   a. TC members training and retraining;
   b. Transfer of experience of European TCs.
ANNEX 1: Development of National Standardisation in the Electricity and Gas Sectors (workshop in Moldova)

Brief Overview

What happened?
In 2014 Moldova signed an Association Agreement with the EU, introducing a Deep and Comprehensive Free Trade Agreement (DCFTA), of which one stipulation sets out the obligation of the country to implement the conditions of the Energy Community Treaty, leading to the adoption and implementation of a large number of European and international electricity and gas standards supporting the Energy Acquis Communautaire. As a consequence Moldova was forced to strengthen its national standardisation system. Accordingly, the Moldovan National Institute for Standardisation made a request for technical support in the form of a two and a half day workshop dedicated to the management and tasks of Technical Committees in the framework of the Ad-Hoc Expert Facility available to stakeholders of the INOGATE ITS project. Main objective of the workshop was to clarify and explain the role of Technical Committees in management and techniques of adoption of European and international standards.

Results

What has been achieved?
The workshop has helped to ensure that the organisation understands the benefits of establishing a TC and lessons learned from EU and other INOGATE PCs. It has also showcased different ways of managing TCs and has introduced the necessary skills and tools to elaborate standardisation work plans and review all standards eligible for adoption and subsequent implementation in Moldova.

In more detail: the ITS experts trained potential TC members in setting priorities for TC work and drafting the structure for electricity and gas TCs and developed an action plan. The participants were very committed to the topics of the workshop and demonstrated the wish of Moldova to model its standardisation system on that of European best practice.

Remarkable success: the workshop resulted in an almost ad hoc creation of a Technical Committee in the gas sector and a separate Technical Committee in the electricity sector, which can both serve as model for future TCs, demonstrating the high level of commitment of Moldova to implement the Association Agreement with the EU by moving away from GOST standards and by adopting European and international standards instead.

Information source: AHEF.MD.073-Final Report
ANNEX 2: Regional Workshop in Tbilisi on Gas Infrastructure and European standard EN 1594:2013 “Gas infrastructure. Pipelines for maximum operating pressure over 16 bar. Functional requirements”

Brief Overview
What happened?
The workshop was an essential first step to achieving adoption of European standards and participation of stakeholders in European standardisation in the Partner Countries. The activity aimed to increase the safety and efficiency of gas transmission networks by provision of specific training to organisations and related experts involved in the gas supply sector. The workshop in Tbilisi was a direct result of the visit paid to Germany described in Annex 3, with the aim to achieve a more in-depth understanding of the role and ways of implementation of key functional gas standards.

Results
What has been achieved?
The participating representatives of the Partner Countries were instructed how to apply EN 1594 with the aim to gradually upgrade and modernise the national gas infrastructure, reduction of gas leakages and overall achieving safer gas installations, leading to a decrease of actual and potential accidents. By focusing on examples of external safety such as the necessity of maintaining safety distances of parts of the network to exposed groups of the population a better overall understanding of the value and sense of the relevant requirements of the standard has been achieved. The participants were also informed that an important aspect of application of functional standards (with EN 1594 as example) in their countries is:

- the necessity of arranging active studying of their content in preferably regional working groups lead by a training coordinator, with the aim of stimulating common understanding and ensure coordinated implementation and uniform application;
- involving at least the following parties concerned with gas transmission: gas companies, transmission system operators, manufacturers of parts and assemblies, construction bureaus, certifying bodies and market surveillance authorities.

Information source: AHEF.GE.118-Final Report
ANNEX 3: Study Visit Gas Transmission Aspects – Germany, Bonn and Essen, 9-11th April 2014

Brief Overview
What happened?
Experts from ten PCs participated in a study visit to Germany with the objective to share knowledge and get acquainted with best practice in the field of gas transmission. The following German organisations active in different fields of gas transmission were visited:
- the German Technical and Scientific Association for Gas and Water (DVGW), developing and publishing codes of practice, which can be used in the production, transportation, distribution and use of energy;
- the Open Grid Office, an independent transmission system operator, which has evolved into Germany's leading natural gas transporter; and
- the German Institute of Gas and Heating (GWI), a research and development institute and testing laboratory dealing with appliance technology and fuel engineering.

Results
What has been achieved?
The participants were informed of the benefits of German gas transmission practices, in particular of the potential of application of the DVGW codes of practice in the field of gas transmission. The event explained how voluntary (harmonised) European standards and additional codes of practice as offered by DVGW may contribute as a complementary tool to the implementation of the relevant national legal stipulations.
In the medium term the knowledge gained is expected to lead to increased participation in the development and subsequent adoption of functional gas standards together with modernisation of national gas infrastructures by the Partner Countries.

Information source: Event Report