



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



## **COMBINED SEMINAR & STUDY TOUR REPORT**

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

**Service Contract No. No 2011/278827**

**INOGATE Gas Cross Border Trading – EU Perspectives  
and Main Challenges: A Regional Seminar and Study Tour  
11<sup>th</sup> GIE Annual Conference  
22-24 May 2013 – Venice & Milan, Italy**

**22-24 MAY, 2013  
VENICE/MILAN**

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## 1. Introduction

This Report examines the INOGATE Gas Cross Border Trading – EU perspectives Combined Event & Study Tour in line with the Objective(s) on B 3.1. and B.3.3 implemented under the EU funded project “INOGATE Technical Secretariat & Integrated Programme in support of the Baku Initiative and the Eastern Partnership energy objectives”. The event was held in Venice and Milan from May 22 to May 25, 2013. The main objectives of the Event were embedded in a specific 3-day format:

### **Day 1 (morning): INOGATE GAS Cross-border Seminar**

- Technical exchange between the INOGATE Partner Countries’ by bringing together EU gas TSOs (DESFA) and expertise from the experienced experts involved in the EU Single Gas Market. The seminar focused on discussion and analysis of EU best practices on cross border cooperation in the gas sector and showcased and familiarised the representatives from Partner Countries with their counterparts in EU gas TSOs & associations. Development of understanding on the EU governance and administration of cooperation platforms in Europe: Capsquare, Link 4 Hubs, TRAC-X, UK NBP, EEX, CEGH, PRISMA European Capacity Platform.

### **Day 1 (afternoon): Study tour at Snam dispatch centre:**

- The INOGATE Partner Countries representatives got familiarised with the structure and facilities of SNAM . The Italia Gas TSO also shared their experience in gas transportation, dispatch and trading. SNAM Dispatching Center - one of the newest and state-of-the-art gas network control centres in the EU- uses the most modern ICT systems for monitoring and remote control of the entire pipelines network of SNAM (over 32,000 km) including 11 compression plants and 8 storage plants.

### **Day 2 and day 3: GIE 11-th annual conference organized by a major Italian gas provider company SNAM**

The participants experienced the unique opportunity to meet the key EU gas players, listen to the latest news on gas infrastructure developments in EU and discuss the most recent energy & gas topics. On the other hand the INOGATE team presented the project and potential investment opportunities in PCs gas infrastructure which allowed to more than 400 participants of the conference to get acquainted with the current projects in INOGATE PCs.

## 2. Preparation of the Event

The preparation of the event consisted of the following tasks:

- Development of the concept note, thematic agenda and selection of the speakers for the event
- Engagement of the speakers and their coordination in order to arrange their presentations’ content so as to be coherent and fulfil the objectives of the event
- Preparation of the evaluation reports and review of seminar’s conclusions’ report
- Development and editing of the training material which would be handed out to the participants together with the seminar conclusions’ report
- More specifically, the specific objectives of the event were:

- To build the necessary capacity amongst representatives from the gas TSOs and gas utilities in the PCs, so as to be able to discuss and analyse possible functionalities of the EU practices in respect of gas cross border cooperation .
  - To create the necessary familiarity amongst key technical stakeholders in the PCs (TEGs) in order to establish a platform for discussion and cooperation.
  - To showcase and familiarise the representatives from key technical stakeholders in the PCs with their counterparts in EU associations and also understand the governance and administration of cooperation platforms (as they are in force in the EU i.e. ENTSO-G, ACER/CEER, etc.).
  - To provide a comprehensive training course to the participants on the key gas TSO competences in cross-border trade, taking also advantage of a study visit to one of the leading EU gas TSO.
- Consequently the event aimed at the following results:
    - The participants should gain a sufficient background knowledge and understanding so as to be able to discuss and analyse possible functionalities of the EU practices in respect of cross border cooperation in gas.
    - Achieve the necessary familiarity among key technical stakeholders in the PCs in order to establish peer-working groups (for each regional market).
    - Establish a certain sense of understanding and appreciation between the key technical stakeholders originating from the PCs and their counterparts from the EU associations.
    - Achieve an adequate understanding should be by the key technical stakeholders in the PCs on the nature of the differences in the regulatory approach, governance and administration of EU-wide cooperation platforms (as they are in force in the EU i.e. ENTSO-G).
    - Elaborate a clear concept of Energy Community activities. TEG experts will have a full understanding of the barriers, the decision making processes, and the important milestones of cross border gas trading in the region of the Energy Community.
    - Identify similarities and profound deviations in the historic evolution and also in the course and continuous effort of establishing cooperation platforms between the EU gas transmission systems and those of the neighbouring countries.
    - The scope and sequence of activities in the INOGATE work programme and the way towards a wider cooperation with INOGATE project is reflected herewith in the seminar's conclusions. More specifically, at the end of the seminar the participants were expected to be fully informed and be able to provide feedback on the activities of the project in relation to gas cross border trading (i.e. cross border trading study, specific further capacity building needs -if any, operation of the TEG and expectations of the INOGATE team on the TEG members). In addition, EM&I Team 5 TEG members have ben familiarised with the most modern systems allowing for an efficient dispatch and monitoring of the Gas Transmission, as well as, the verification of accurate measurement of the flows, including volumes involved in cross border trading.

### 3. The Event

#### 3.1 Combined Event/Study Tour Overview

- The INOGATE Seminar took place on May 22, 2013 at the VENICE LAGUNA PALACE HOTEL- Viale Ancona 2 30172 Mestre Venezia, ITALY | T. 0418296017 F. 0418296124
- The study-tour took place in Milan, Snam dispatch centre at San Donato Milanese
- The GIE conference took place in Venice Hilton Mulino Stucchi Hotel.

The agenda of the event is presented in Appendix 6.1.

During the event the following topics have been discussed:

#### INOGATE Seminar - 22 May 2013

- The new INOGATE Technical Secretariat and its activities in relation to Cross Border Trading presented by Mr. Nikos Tsakalidis, KE2: Electricity & Gas, INOGATE Technical Secretariat (ITS)
- Existing Platforms in Europe: Capsquare, Link 4 Hubs, TRAC-X, UK NBP, EEX, CEGH PRISMA European Capacity Platform presented by Mr. Tony Mackay, Senior Economic Gas Expert, INOGATE Technical Secretariat
- Unbundling and regulation in the EU. Reasons and models of unbundling; The role and functions of the regulator; The EU legal framework for Regulation; TSO convergence within EU and standardisation of TSO procedures presented by Mr. N. Katsis, Director of the Strategy and Business Planning Division, DESFA
- An Overview of European Gas Trading Practices. Long Term Contracts-Basic Provisions; Supply versus Transmission (Transit) Contracts presented by Mr. Tony Mackay, Senior Economic Gas Expert, INOGATE Technical Secretariat
- DESFA, THE GREEK TSO. The role of a TSO in the gas market, Organisational description and functions. The role of a single TSO in coordinating energy flows (internal & cross border), Market functioning and timelines, International and/regional activities, Cross Border Issues presented by Mr George Paparsenos, DESFA CEO

#### Presentation of SNAM and its subsidiaries, 22 May 2013

Presentation of SNAM and its facilities & the new dispatching centre, visit to the dispatching centre.

#### GIE conference, 23-24 May 2013

Topics discussed:

- Building a real European gas market
- The integration of European gas market: the Italian perspective
- Energy Infrastructure Package: implementation progress and expected outcome
- Consolidation of the gas infrastructure companies and investment climate
- European Gas Market in a global context – supply/prices 2020 outlooks
- The changing role of storage in the European energy system
- Energy Technologies and Innovation in a future European Energy Policy
- Offshore LNG (liquefaction & regasification): new ways to supply gas to Europe
- Gas industry moving towards a low-carbon economy: pilot project on Power-to-Gas + mobility
- CO2 transport and H2 injection

### **3.2 The participants**

Totally 15 participants attended the event and were from the following countries: Armenia (1), Belarus (1), Azerbaijan (2), Georgia (3), Tajikistan (2), Moldova (2), Ukraine (2), Kyrgyzstan (1) and Uzbekistan (1). The list of participants of the event is included in Appendix 6.2.

## **4. Evaluation of the Event**

The evaluation of the event and its impact has been performed using the questionnaires (which are presented in Appendix 6.4) and those were filled-in by the participants before and after the event. The evaluation aimed at:

- The assessment of the overall organisation of the event (presentations, logistics, hotel, etc.) as well as the usefulness & quality of each session.

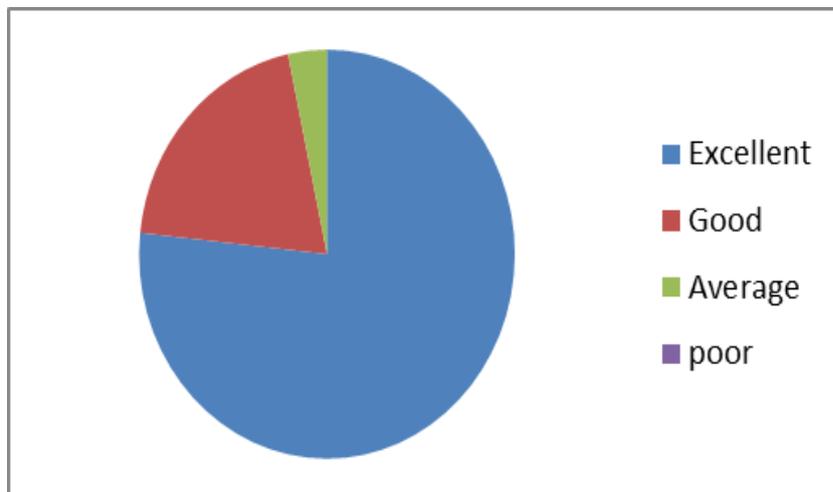
- A self-assessment on the knowledge gained & an evaluation on the degree of covering priority needs of the participants by the contributions delivered in the event.

Overall organisation evaluation

An evaluation of the overall organisation of the event included the following components:

- 1) Organisational Aspects
  - Overall Organisation
  - Travel and visa support
  - On-site organisation
  - Quality of the hotel
  - Study Visit to SNAM
  - Participation in 11<sup>th</sup> GIE conference
- 2) Quality of Sessions (selection of topics) for INOGATE seminar, study visit to SNAM and GIE conference
- 3) Achievement of the INOGATE seminar's objectives

The participants valued the organisation of the event highly, by giving excellent and very good ranks. The summary of the evaluation results for all above mentioned components is presented in Appendix 6.5 (A). The Figure below presents an example of summary evaluation results concerning the Organisational part.

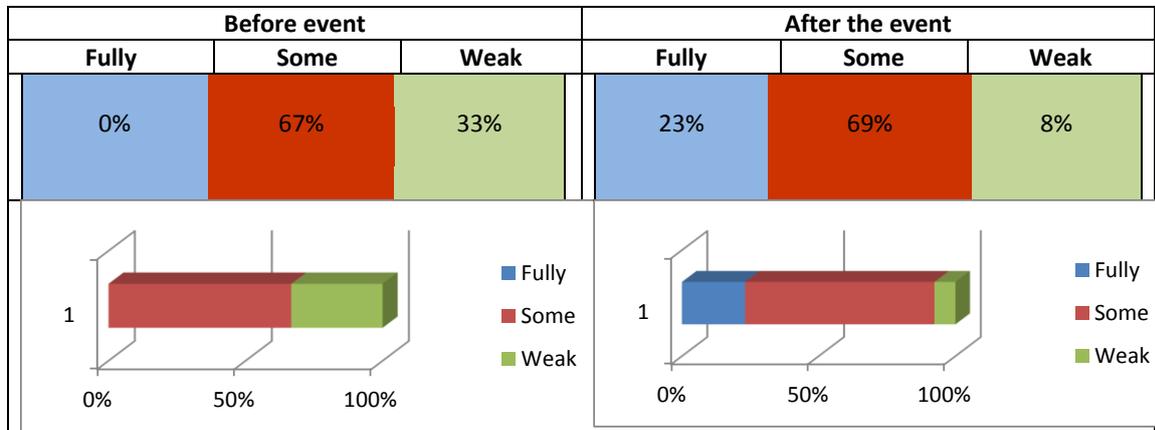


The results of the evaluation seem to be quite positive with “poor” scoring eliminated and even “average” score as a rather limited percentage

Gained general and specific knowledge and priority needs evaluation

The summary of the evaluation results for gained knowledge and priority needs is presented in Appendix 6.5 (B). The evaluation was performed against the general issues such as understanding of European policy and legislation on the energy sector, knowledge on the European TSO organisation and its role in coordinating energy flow, knowledge and understanding of the key concepts of the gas cross-border trading, etc.. And, against the specific issues, such as personal/organisational potential to contribute to the development and negotiation of CBT agreements, etc.. The evaluation shows that for the majority of the components assessed, the participants gained important knowledge and improved their understanding.

The following Figure presents an example of summary evaluation results concerning knowledge acquired on terms and conditions of agreements on Cross Border Trading within the EU.



#### 4.1 General & specific comments

The summary of the feedback provided after the event relates to the following points:

- 1. Specific statements on how the participants will apply acquired knowledge and skills in their daily work.**
  - Using the acquired knowledge in the production area run by my organisation.
  - Identification of gaps in current methods and filling the gaps using the knowledge from the seminar.
  - Better understanding of EU issues in the process of Georgian energy policy approximation with the EU.
  - Using the acquired knowledge in a timely manner to resolve everyday (business-as-usual) activities.
  - Introduction of new technologies in the dispatching services and for Personnel Training of the Control Centre of my organisation
  - In a view of gas restructuring process (e.g. Ukraine), the acquired knowledge is to be used to implement the process in line with EU principles.
  - Improving control during the Gas extraction and transportation, at the gas distribution stations.
- 2. Participants' opinion on how the regional seminar, the study-tour, and the 11th GIE conference has clarified the role of important institutions, their roles and functions in the gas market.**
  - Many participants mentioned that the seminar was very interesting, and organised on a multidisciplinary manner. There was involved an adequate number of CBT, storage and also gas supply institutions and companies.
  - Regional Seminar, study-tour and participation in GIE conference enabled the participants to understand both the short-and long-term problems and their solution methodologies.
  - Many participants are confident that the skills gained during the event will be implemented in the daily activities.
  - Common themes in the area of gas regulation and implementation, creating a positive environment to solve problems arising in the future.
  - The regulator's role has become clear, In addition, the operator's certification process has been explained along with the compliance criteria provided for by the Gas Directive, (third legislative package).
- 3. Influence of European practices presented during the event on participant's work and their country.**

- Some participants are confident that the presented practice will support in the decision making process of their countries to go forward the association agreements with EU.
- Experience from SNAM dispatching system and specifically the control and use of modern equipment, can be used in the activities of INOGATE PCs organisations.
- The information and conference materials will bring a positive effect.
- The participant from Ukraine believes that the experience of unbundling of the company DESFA and the lessons learnt, will be especially useful for the reformation (currently on-going) of "NaftoGaz Ukraina"

#### **4. Improvement of the Cross Border Trading in PCs country through the knowledge and skills acquired during regional seminar, the study tour and the 11th GIE conference.**

- Acquired knowledge will contribute to the improvement of the qualifications and experience on negotiations signing the contracts with partner companies.
- INOGATE Seminar, Study-tour and participation in GIE conference enabled the participants to continue adopting the CBT practice in their country according to the EU principles.
- The participants from Tajikistan noted that the Cross Border Gas Pipeline projects, such as "Afghanistan-Tajikistan" and "Turkmenistan-Uzbekistan-Tajikistan-People's Republic of China" could benefit from the gained knowledge and experience.
- Ukraine is interested on the diversification of natural gas supplies. Until recently the only supplier was Russian Federation. In 2012 there were gas supplies from Poland and Hungary. The seminar helped to understand the rules and conditions of CBT applied in EU.

#### **5. Benefits brought by the seminar to the participants as the members of Technical Expert Groups (TEGs)**

- The conference fully covered interested issues and offered huge amount of useful information on capacity building, transportation, storage and marketing initiatives, and environmental protection.
- Awareness has been raised regarding the technical experts group. The system of collecting information on specific problems, their systemizing, determination of recommendations on specific issues
- The seminar gave the chance to the participants representing potential trading partners, to get together and discuss the cross-border issues.
- Benefits noted in the implementation of projects and introduction of new technologies in the gas extraction field.

## **5. Main issues addressed**

### **5.1 INOGATE Gas Cross Border Trading Seminar**

#### **The new INOGATE project**

- The important achievements of INOGATE programme was presented to the TEGs by ITS, for the period of 1996-2011. The past projects involved technical assistance and training but also equipment supplies, and they were targeted to Resources Efficiency and Energy Markets Convergence in the regions of Eastern Europe, Caucasus and Central Asia Countries to Europe as well as to the cooperation between the regions.
- The new INOGATE programme started on February 2012 and will last until January 2015., The budget is 16,5€ and focuses to provide technical assistance to PCs regarding infrastructure improvement (regulation, standards, cross border trade, decrease losses) in Gas and Electricity sector, develop capacity in sustainable energy and develop and integrate energy statistics.
- INOGATE Technical Secretariat in view of achieving its goals cooperates with all EU partner organisations in energy, like Marcogaz, ACER, Energy Community, ENTSO-E, ENTSO-G, CENELEC, ERRA, EURO GAS etc.

- The work programme includes horizontal activities, which address all PCs (i.e. studies, reports, seminars, workshops and study tours) and allow of a certain degree of flexibility through the Ad Hoc Expert Facility which is in turn designed to address specific requests in one or more countries. ITS has stressed to participants how important the regional dimension on the implementation of AHEFs is, because that apart of solving specific problems there is a certain need for improvement of the cooperation between the countries.
- The establishment of the Technical Experts Group - being the contact point of ITS and PCs for each section of activities - aims to the overall steering of the INOGATE Programme, maximize benefits in the PCs, as well as strengthening the ownership and results of the project activities.

### **EU trading Platforms and Hubs**

- By gradually moving away from long term oil-indexed contracts, the importance and the number of trading hubs in EU has equally increased.
- There are two main EU hubs, the National Balancing Point (NBP) in UK, and Title Transfer Facility (TTF) in Netherlands, and few National Hubs in other EU countries.
- NBP traded volumes are more than 10 times the physical volumes,
- There is limited developments to date in Southern and Eastern Europe.
- With the foundation of PRISMA, major European TSOs from Austria, Belgium, Denmark, Germany, France, Italy and the Nederland's, have bundled their collective experience in the field of capacity booking platforms, to create a joint European capacity platform. The interest of participants on this new European platform, and how is going to work, revealed by addressing a lot of questions regarding the procedures and codes developed for the operation of PRISMA, hence the session concentrated on the description of PRISMA principles.
- The goal of the new European Platform, which was launched on 1st April 2013, is the early implementation of ENTSOG's Network code on Capacity Allocation Mechanisms, the future market rules for allocating transport capacity. The platform is able to handle harmonised capacity products, offer auction mechanisms and serve different TSO blackened systems in accordance with ENTSOG's CAM Network Code.
- PRISMA primarily is a major step towards an integrated European gas market linking the gas markets of seven different countries in the core of Europe. It opens new possibilities for cross-border gas transport to shippers, who can, for the first time, book capacities at European network points through one single platform. The platform will in future also have a secondary function market.
- The new PRISMA European Capacity Platform is based on the experience of the operation of three existing platforms in Europe: Cap-square, Link4Hubs, as well as, the former TRAC-X primary platform.

### **EU Unbundling and Regulation**

- The timeline of EU gas regulatory changes have been presented, starting by the issue of the first directive in 1998, the second in 2003, the EU third package in 2009, and the publication of the Network codes (CAM, BAL, INT, TAR) in 2013. In the introduction of this session, the differences of the three directives were highlighted and the gradual development of unbundling in European Countries has been showcased. The discussion focused to the differences between the second and the third package and the difficulties of applying the transparent and fair third-party access to transmission, distribution, storage and LNG regasification facilities with emphasis on the cross border integration.
- The achievements of unbundling to the operation of gas transmission within a country but mainly to the cross border trading have also been thoroughly explained to the participants. It has also been explained that

unbundling provisions have gradually evolved and improved in the Energy Directives in view of specific aims; i.e. to avoid potential conflict of interest for integrated utilities, to prevent utility to shift costs between regulated and unregulated business, to enable utilities to identify the cost structure of their business activities, and to allow the separate costing of services and introduction of competition.

- Within this framework, the evolution of unbundling models and their characteristics i.e. Ownership Unbundling (OU), the Independent System Operator (ISO) and the Independent Transmission Operator (ITO) have been discussed and clarified. This part of the third session concluded with the TSO convergence within EU through the standardisation of TSO procedures and the application for the Certification by ACER (article 10 of the third Gas Directive, 2009/73/EC in combination with the provisions of article 3 of Regulation 715/2009)
- The second part dedicated to the role of Regulator under the Third Gas Directive, its statutory duties and powers:
  - Single regulatory authority at the national level.
  - Regulator's independency with budgetary autonomy and adequate human and financial resources to carry out its duties and functional independence from any other private or public entity.
  - Cooperation at the European level and close the regulatory gap in region.
  - Right to take binding decisions, to investigate into marketing functioning and to impose fines for non-conformance.
- The second part of the session concluded with the discussion regarding the Establishment and the Role of the ACER (European Agency for the Cooperation of Energy Regulators). In this part the speaker referred analytically to the tasks of ACER which are to:
  - Ensure that national regulatory authorities have a framework within which they can cooperate on decisions taken by national regulators that have direct impact on the internal market
  - They exercise appropriate oversight of the cooperation between TSOs, including monitoring and review of their activities.
  - Ensure that individual decision-making powers are established for specific cross border issues, especially for infrastructure projects involving more than one member state.
  - Ensure that the current advisory role for regulators towards the Commission through ERGEG is preserved and even go beyond to the advisory role to the EC, providing recommendations.
- Despite the above, the speaker clarified that the Agency is not a substitute for the national regulators, nor it is a European Regulator. Its role is to complement at a European level the regulatory tasks performed at the national level.

### **Model contracts**

- The analysis of the present Gas market in the INOGATE PCs and Europe, is necessary for understanding the changes in the type of contracts and the model contracts, that are used in different regions. The PCs are either producers and exporters (such as Turkmenistan and Azerbaijan), or importers with some domestic production (Ukraine for instance) or Gas Importers only. In the last years, there was increasing export possibilities also to China and India.
- The Gas demand in Europe increases and it is expected from 500 Mtoe to reach the 600Mtoe in 2025. Half of the present demand is covered by the EU indigenous production and the Norwegian exports, the other half from

contracted imports outside Europe. The new demand from 50 to 150 Mtoe should be covered with additional supplies.

- Regarding Gas prices there is a continuous effort from EU to have competitive prices which will not depend on oil prices, at present the 58% of the supply is still oil-indexed, but the 42% is market priced.
- Shale gas in USA has dramatically reduced gas prices and through the LNG growth a reduction could be possible for Europe.
- The Model Contracts for Gas Cross Border Trading vary from the traditional "Long Term Supply Contracts (LTC)", the "Short Term Contracts (STC)", Spot markets, Future markets, Hub-based contracts, trading platforms (PRISMA) and Transit Contracts. The subject was very interesting to participants and they raised certain queries, hence the rest of the session spent by speaker on analysis of the cons and pros of the various model contracts and how EU tries to move away from LTC.
- The long term contracts were the traditional contracts in gas supply. They were providing security needed to justify large investments in production facilities, pipelines and gas power stations. Very often, the relation of producers and consumers was a monopoly. Nowadays the LTC are much less common in Northern Europe but are still very common in Eastern Europe and Central Asia.
- Moving away from LTC in EU is due to:
  - Diversification of Gas supplies, such as LNG imports and shale gas.
  - EU policies for unbundling and increased competition through Gas Directives
  - EU policies in support of domestic consumers
  - Increased competition in some EU countries
  - Increased involvement of traders and other financial institutions.
- Concluding this session, the speaker explained to participants that with all these Directives and developments in EU countries, the single market and one price becomes a very realistic goal, because already:
  - The market is transparent with plenty of information on traded gas volumes and prices
  - The published information suggests very competitive markets and there is a range of information sources, such Argus Natural Gas daily market report (with this opportunity the speaker showed to participants how they can have access to this information through Internet).
  - There are small differences in published gas prices between the various hubs.

### **Transmission System Operator-DESFA Case**

- The speaker of the fifth session was the CEO of the Greek TSO DESFA, and presented the changes of the company along with the developments taken place due to the European Directives for the Gas Market convergence. Greek TSO is the most recently established in Europe. , This fact appeared to be very interesting for the PC representatives, especially the ones from Ukraine, Moldova, Armenia, Georgia, that already have started considering Unbundling; and they face problems that have been recently resolved by DESFA.

- Greek High Pressure network consists of 1289 km, with significant room for additional volumes. There are three entry points:
  - Russian gas is imported via the Greek-Bulgarian border (55% in 2012)
  - Azeri gas is imported via the Greek-Turkish border (14% in 2012), and
  - LNG from various sources, (indicatively Algeria, Egypt, Nigeria, and Trinidad), is imported via the Revithoussa LNG Terminal (31% in 2012)
- The timeline of European Directives, the Greek Ministerial and Presidential Decrees, and the DESFA organisational changes between 2005 and 2013, were very challenging sequential events as they have been appreciated by all participants. The discussion and questions concentrated to the conclusion in 2012 with the ministerial decisions for Tariffs regulation and Tariffs for the usage of National Natural Gas Transmission System as well as in 2013 at the process of DESFA getting the ITO Certification in accordance to Law 4001/2013.
- The speaker explained the role of a single TSO in coordinating energy flows both internally and in respect of cross border exchanges. He presented the cooperation with upstream and downstream networks, in order to guarantee the uninterrupted gas flow in the country, the access to the system in accordance with the 3rd Energy Package and the full compliance with regulatory requirements relating to security of supply. He also described the close cooperation with neighbouring TSOs (the BULGARTANZSGAZ (Bulgaria) and BOTAS (Turkey)), and the common infrastructure projects at the borders to secure both ways flow of gas, concerning security of supply to both countries.
- He concluded the session, by presenting DESFAs plans and projects in the event that TAP project is being approved and the Azeri Gas will be able to flow through Greece and western Balkans to Italy, Switzerland and Western European Markets.

### **Status of compliance of the Gas TSOs with the Energy Community Requirements**

- Last but not least the agenda involved the presentation of the representative of Energy Community regarding the present status of PCs in the community and the main requirements for new contracting parties.
- The INOGATE PCs already related to the Energy Community are:
  - Ukraine and Moldova, as Contracting Parties
  - Georgia, as observer applied for the full membership as Contracting Party in January 2013, and
  - Armenia, as observer.
- The speaker presented the status of each Contracting Party regarding:
  - The establishment of the TSO entity
  - The progress in unbundling
  - The status in TPA access and tariffs
  - The progress in preparation and compliance to EU directives for CAM and CMP.

- The balancing requirements and
- The actions for security of supply
  
- It was very interesting to notice the variety of problems each country faces, and the different approaches deployed for the hurdles to be resolved. Questions concerning those subjects were submitted by the participants, and the speaker explained the EC Strategy and Projects for the Gas Market convergence within EnC.
  
- The speaker concluded indicating the main goals of European Community Contracting Parties:
  - Making unbundling happen, as soon as possible
  - Settling the disputes (grid operators vs. NRA)
  - Third package-certification,
  - Adopting Grid/Market codes
  - Abolishing the distinction between transmission and cross border flows
  - Proactive cooperation with ENTSOG and Gas Coordination, Group
  - Supporting cross-border infrastructure projects.

## **5.2 Study Tour to the SNAM RETE Gas Dispatching Centre in Milan**

- The Speaker presented SNAM, the Italian main TSO which consists of four separate entities
  - a) The dispatching centre SNAM RETE, with 32,300km of pipelines, 11 compression stations, 5 import points and 5 export points having the 94% of market share.
  - b) The storage facility STOGIT with 8 operating fields, 8 compression stations, and 8 treatment plants with total capacity of 15bcm working gas, having the 97% of the market share.
  - c) The GNL ITALIA with one onshore terminal of 3.5 bcm regasification capacity and 100,000 bcm storage capacity covering the 30% of the market , and
  - d) The distribution company ITALGAS with 50,000km pipelines, 1400 distribution concessions and 5,7 million delivery points served, having the 33% market share.
  
- The functionality of the dispatching centre ensures:
  - a) Execution of transportation plan
  - b) Physical balance of the network
  - c) Coordination with other operators

- d) Response to emergency services
- The control room is organised to manage four distinct operations:
    - a) Management of Telemetry System
    - b) Transportation and physical balancing
    - c) Management of special support tools
    - d) Operational Planning and Gas Quality.
  - SCADA's Features
    - a) Today the SCADA system handles, every minute more than 25,000 data sets, coming from both the 80,000 control points, related to the gas plants, and other 130,000 points related to the communication system.
    - b) The first dispatching centre established in 1962, and the first SCADA installed in 1969. In 2012 the 5th generation SCADA operated with a single software platform based on TELEVENT OASYS DNA SCADA.
    - c) The SCADA acquires data and sends remote commands to remote terminal units, by using both a proprietary telecommunication network and satellite technology in order to have constantly double route. Data are updated each minute in approximately 1500 plants.
    - d) The SCADA acquires once a day, via modem, all relevant data on an hourly profile and it acquires alarms generated on field upon event, in approximately 1200 plants.
    - e) The new video wall consists of 24 video screens (80" each) with LED retro projection technology, (the total dimension of the video wall is 46 sq.m.). Every single video screen has double input functionality in order to guarantee hot-backup function mode. The screens are of high performance and sharpness.
  - There was a long discussion between participants and the speaker, regarding the physical balancing of the gas network. The speaker realised the big interest on the subject and presented in details how the SCADA calculates it and how the physical balancing of the network uses line pack to verify the equation of transportation through the equation:

$$\text{Inlet (I+S)} - \text{Outlet (R+C+LK)} = \text{DLP}$$

Where:

I = import and national production

S= storage

R= delivery

C= consumptions

LK= leakage

DLP= Line-Pack variation.

## 5.3 GIE annual conference

### ITS presentation in the conference

ITS presented the following subjects in the conference attended by 380 participants from all European Gas Stakeholders:

#### a) The INOGATE Programme Building Partnerships for Energy Security

The speaker presented the mission, the objectives, the organisation and the results of the INOGATE programme.

- The Challenge of INOGATE is to secure adequate and reliable energy resources, at affordable prices, for citizens in both the INOGATE Partner Countries and the EU
- The speaker presented the organisation of INOGATE, consisting of the decisions in the policies applied and the objectives of the programme which are decisions on ministerial level (Astana Declaration etc.), the review and monitoring of the work by the European Commissioning, and the INOGATE Country Experts, the Implementation by ITS, Project Contractors, Working Group Members and the Regulatory Representatives, finally the Beneficiaries and Stakeholders of the INOGATE are the Energy Regulators, Energy Agencies, ESCOs, Energy Companies, TSOs, DSOs, Utilities, Associations (gas and electricity), Construction Authorities, Standardization Bodies, Statistic Institutes, IFIs, Consumer Protection Groups, Civil Society, etc..
- The speaker concluded with INOGATE achievements in the period 1996-2011:
  - Implement more than 60 projects
  - Supply of small-scale equipment
  - Provide Technical Assistance to all Partner Countries of a value of 125 million EUR
  - Training of 7,000 people

#### b) Investment opportunities in Gas Sector

- The speaker before proceeding to the specific investment opportunities of each country presented the Gas Markets key features in the 11 Partner Countries, as well as, the social and business environment for the attraction of investment.
- For the Gas Markets Convergence the progress in Third Party Access, in Unbundling and in establishment & operation of an Independent Energy Regulator have been presented. The conclusion for these areas is that some countries have made good progress such as Ukraine, Georgia and Armenia, but on the contrary some others have done very little progress such as Kyrgyzstan and Turkmenistan.
- For the Investment Attraction area, the Investment Framework, the Investment Climate, and the Investing Planning have been reviewed, and presented as per the INOGATE 2011 Status Report. The audience has been impressed for the progress of some countries in the World Bank's ranking table of "ease of doing

business", where all PCs have shown positive progress, and half of them are between the first 70 countries, special reference has been made for Georgia which is the 9th position.

- The speaker referred to all potential new projects in the area. Especially the new transport infrastructure to transport Shah Deniz II gas includes:
  - The extension of South Caucasus pipeline from Azerbaijan to Turkey through Georgia
  - The trans-Anatolian pipeline in Turkey
  - The trans-Adriatic Pipeline or Nabucco-West inside the EU

Following are some of the major planned investment programmes:

- Armenia started implementation of the underground gas storage extension and the extension of import (from Iran) pipelines
  - Azerbaijan currently undergoing new extraction/expansion of gas fields (Shah Deniz II) and new infrastructure for its transport is planned
  - Belarus plans to extend the underground gas storage facilities
  - Georgia plans to construct underground gas storage and to extend the transmission pipeline network
  - Kazakhstan plans to reconstruct two existing Gas Storage Facilities and expand/modernise existing gas pipelines
  - Moldova plans to build a gas Interconnector with Romania
  - Ukraine plans to build new onshore and offshore LNG facilities
  - Tajikistan plans to construct new Transmission Lines, one that will be connected with Afghanistan and a second with Turkmenistan-Tajikistan-China
  - Turkmenistan plans to expand gas production and export facilities
  - Uzbekistan will develop new gas production fields and expand export capacity
- The speaker concluded his presentation with reference to Rehabilitation, Upgrading, Metering and Billing projects that are quite promising in all PCs. In this area INOGATE have done a lot of work and improved the level of infrastructure modernisation. In Central Asia (2008-2009), an inspection of segment of 700km of gas pipelines and one compressor station revealed a total annual loss valued at over 2,4 million EUR. INOGATE not only helped repair most of the leaks, but also demonstrated that modern methods and technologies for gas loss reduction benefit the environment while offering a significant investment return. In the metering area with INOGATE support (2003-2011) a major metrology centre was constructed and equipped at Boyarka, Ukraine.

### **GIE Conference presentations**

The content of conference presentations is presented in Appendix 6.3

## 6. Annexes

### 6.1 Agenda

The Agenda of the event could be seen in the following link of the INOGATE web portal ([http://www.inogate.org/index.php?option=com\\_inogate&view=activity&cid=246&pid=72&Itemid=75&lang=en](http://www.inogate.org/index.php?option=com_inogate&view=activity&cid=246&pid=72&Itemid=75&lang=en))

### 6.2 List of participants

The List of Participants of the event could be seen in the following link of the INOGATE web portal ([http://www.inogate.org/index.php?option=com\\_inogate&view=activity&cid=246&pid=72&Itemid=75&lang=en](http://www.inogate.org/index.php?option=com_inogate&view=activity&cid=246&pid=72&Itemid=75&lang=en))

### 6.3 Presentations

The main presentations of the INOGATE seminar could be seen in the following link of the INOGATE web portal ([http://www.inogate.org/index.php?option=com\\_inogate&view=activity&cid=246&pid=72&Itemid=75&lang=en](http://www.inogate.org/index.php?option=com_inogate&view=activity&cid=246&pid=72&Itemid=75&lang=en))

The material from the 11<sup>th</sup> GIE conference could be seen from the link: <http://www.gie.eu/index.php/annual-conference-2013-home>

### 6.4 Questionnaires

### 6.5 Evaluation results tables

### 6.6 Photos & media material

a) Article in Russian press

<http://expert.ru/2013/05/28/podmochennyij-ryinok-evropy/>

b) Article in Italian energy weekly

[www.quotidianoenergia.it](http://www.quotidianoenergia.it)

c) Publication of DESFA (Greek TSO): <http://www.b2green.gr/main.php?plD=17&nID=2459&lang=el#>

d) The photos of the event could be seen in the following link of the INOGATE web portal

([http://www.inogate.org/index.php?option=com\\_inogate&view=activity&cid=246&pid=72&Itemid=75&lang=en](http://www.inogate.org/index.php?option=com_inogate&view=activity&cid=246&pid=72&Itemid=75&lang=en))