

MINISTRIA E ENERGJISË DHE INDUSTRISË

Progress on the improvement of the safety requirement for the gas infrastructure system in Albania

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1.- Historical and recent Situation of the Albanian Petroleum Sector

2.- Historical development of petroleum infrastructure and technical rules on transport and distribution of oil, gas and their byproducts.

3.- Main goals for Gasification of Albania

4.- Improvement on the preparation of the minimum requirements of the technical design, construction and safe operation of the transmission and distribution gas systems. (Natural Gas Technical Rules)

5.- Safety and technical requirements for gas infrastructure

6.- The most advanced technical standards in the safe design and construction of the TAP pipeline

<u>Instend of Conclusions</u> What to do further for safe implementation of technical rules?



I.- Historic and Recent Situation of the Albanian Petroleum Sector

Albania was established as a Hydrocarbon bearing province as early as Roman times, when **heavy oil and asphalts of Selenica** mine were used for lamps.

In 1918 the first oil discovery was made in Oligocene flysch in Drashovica.

In 1927, 1928 respectively **Kucova and Patosi oil fields** related to Messinian clastic reservoirs were discovered. **Marinza** as the biggest oil field in Albania related to Messinian-Tortonian clastics reservoirs was discovered in 1957.

Visoka, as the first oil field related to carbonate reservoirs, discovered in 1963, was followed by other discoveries such as: **Gorishti** (1965), **Ballsh**i (1966), **Finiq-Krane** (1974), **Cakran-Mollaj** (1977), **Amonica** (1980) and **Delvina** (1987).

With the first Gas discovery (1963) in the Tortonian sandstone layers of Divjaka, other gas fields respectively: Frakulla (1972), Ballaj 1983, Povelca and Panaja gas fields in 1987 and Durresi (1988) were discovered.

Gas production reached its peak in 1982 with 0.937 Bcm/year.

The cumulative production of N-G estimated at 3.15 Bcm, while the associated gas is at 8.7 Bcm.



Oil and Gas Fields in Albania

Gas production and consumption in Albania

Since 1971, natural gas production in the Albania was increasing until 1980-ies, when it reached its peak at 0.4 billion m³. Since that year, production began to decline till end of 1990-ies, when it almost stopped.
 At the end of 1990 this diminished production is used only for own consumption on the domestic refineries and on the gas and oil production.
 The domestic gas production capacities are in their minimal limits, due to drying up of the reserves and decline of the initial pressure in oil resources. The total proven reserves of natural gas in the country are some 57 Million m³.

Total crude oil production in 2015 has been 1,279,136 tonnes (not certified yet). Total associated gas production in 2015 has been 92,015,000 Nm³.,

- There is no significant gas consumption in Albania in the base year. Minor quantities of gas are used for own use in oil and gas production.
- With the development of the TAP and IAP pipeline it is expected that natural gas consumption will grow to 1,6 bcm of natural gas till 2030.
- Share of transformation in the forecasted total gas consumption is foreseen to be 65-70% in 2030.

DOMESTIC CRUDE OIL PRODUCTION



On 2016 it is planned that the crude oil production will arrive about 1.4 Million Tons

New petroleum explorations

Albania: Compelling Initial Well Test Results at Shpirag-2

- Three day test (duration restricted due to limited fluid handling capacity/tankage)
- Well flowed at rates of 1,500 to 2,200 boe/day
- 800 to 1,300 bpd of 35 to 37 degree API oil and 2 to 5 mmcfd of gas
- Gas to oil ratio in the range of 2,500 to 2,800 scf/bbl
- Lower than expected levels of hydrogen sulfide (0.5%)
- Calculated oil column > 800 m
- Test results confirm ability to flow light oil from fractured reservoir
- Well was shut in with recorders; data retrieved and analyzed
- Oil flow validates the potential of Blocks 2-3



SHELL Int. & Petromanas new discovery. Shpiragu-2 well, Blocks 2-3, ALBANIA

Photo: Molisht-1 Wells

II.- Historical development of petroleum infrastructure and technical rules on transport and distribution of oil, gas and their byproducts.

Infrastructure Network on natural and associated gas transport has had a broader extension than oil transport infrastructure, which is conditioned by the greater geographical extension that have gas fields, starting from Durres to Delvina.

 Gas pipeline network has a length of about 410 km and connects all existing gas fields (Divjaka, Frakulla, Povelça, Ballaj, Delvina) and existing oilfields that have significant amounts of associated gas.

• Over the last decade due to low gas production, some of gas pipelines aren't in operation, which has brought their damage.

The current pipeline network in Albania is of a low pressures one, and can not serve as supply network in the case of the international gas network connection.



Oil and Gas Pipelines network in the Albanian Territory.

Historical development of petroleum infrastructure and technical rules on transport and distribution of oil, gas and their derivatives.

- **During 50th and 60th of last century**, in Albania was built on a comprehensive and effective infrastructure of installations, plants, storages, trading stations and units for oil and gas and their byproducts.
- For the construction and operation of petroleum plants and infrastructure were implemented technical norms and conditions similar to those that have been applied mainly in Eastern European countries.
- Adoption of the Law No. 8450, dated 24.02.1999 "On the refining, transportation and trading of oil, gas and their byproducts", has determined that companies that operate in accordance with the provisions of this law should be in use or may construct and use facilities and infrastructure in which to apply technical rules and conditions of the most advanced international standards.
- **Refering to the provisions of Law No. 8450, dated 24.02.1999,** were established procedures for the drafting of technical standards and conditions, as an obligation of the responsible ministry for petroleum activities, which charged them with publishing.
- Drafting and approving of the technical conditions and norms in the field of transportation, storage and trading of oil, gas and their by-products, through the Minister Order No.184, dated 05.7.2005





III.- Main goals for Gasification of Albania

- Linking Albania with the international gas network according to the best option (Eurasia Gas Corridor and Energy Community Gas Ring)
- -**Preparation of the necessary Albanian legislation for the gas sector** in compliance with European legal framework (Regulatory and Investment framework reliability)
- -Development of national gas resources
- -Restructuring the existing pipeline system for gas transmission in Albania
- -Management of the Albanian gas market
- Use of natural gas as an alternative energy source and for the production of electrical energy with gas fired thermal power stations-
- Development of regional underground gas storage reservoirs and LNG Terminals projects.

Potential Gas Demand in Albania

- □ The potential demand for natural gas in Albania is very high, while there is no gas available.
- Exhausted indigenous gas resources are no longer able to contribute in the national primary energy balance. The current limited gas production is used mainly for oil and refining operations by two oil companies ARMO and Albpetrol, to fulfill part of their own technological needs.
- The GoA plan for the development of gas sector and market in the country addresses several aspects including legal, regulatory and institutional related to the construction operation and regulation of the gas infrastructure and gas supply of the country.
- The "National Strategy of Energy, (updated)", estimates the gas consumption by year 2030 to be at the level of 1.5 to 1.8 BCM/year.
- The main consumers are expected to be:
 - First priority, power generation sector and industrial consumers,
 - Second priority, service sectors, which will use the natural gas for heating,
 - Third priority, householding sector for using of natural gas for cooking and hot water,.

Forecast of N-G Consumption by Sectors 2018-2030 (Ktoe)

(SOURCE: NATIONAL AGENCY OF NATURAL RESOURCES -AKBN)



Albanian Gas Master Plan

- WBIF has approved a fund of 1.1 Million Euro to finance the preparation of the Albanian Gar Master Plan, within two years. (The project "Gas Master Plan for Albania & Project Identification Plan", will be completed within this year)
- Albanian Gar Master Plan is of great importance not only for the Albanian Energy sector, but for Albanian overall development as well.
- Albanian Gar Master Plan will consider and will affect the developing of the gas sector or the gasification of the neighbor countries (Monte Negro, Kosovo, Macedonia, Greece), and of the region, as well.
- The COWI IPF consultant has started the preparation of the Gas Master Plan reports and the Strategic Environmental Assessment for this project, and they are using all studies, analyzes, reports and other documentation previously undertaken related to our project.
- An important part of the project is the preparation of the «Project Identification Plan», which will design the main component of the Albanian gas network.



IV.- Improvement on the preparation of the minimum requirements of the technical design, construction and safe operation of the transmission and distribution gas systems (Natural Gas Technical Rules)

- <u>Up the 2008</u> the definitions for the minimum requirements of the technical design, construction and safe operation of the transmission and distribution gas systems, has been referred to the <u>law no. 8450</u>, <u>dated 24.02.1999</u> "On the refining, transportation and trading of oil, gas and their byproducts", as amended, and on the Order of Minister no. 184, dated 05.7.2005,
- <u>The approval of the law nr. 9946, dated 30.06.2008</u>, « On the Natural Gas Sector » defined the new legal way and requarements for the preparation, adaptation and approval of the gas technical rules and the safety criterions, for the minimum requirements of the technical design, construction and operation of the transmission and distribution gas systems, the installation of LNG system, underground gas storages and direct pipelines.
- To treat and fulfil any request for construction and operation of the new gas infrastructure in Albania, considering the necesary time for the preparation of the technical rules of the gas sector (evaluated around ten years), has been approval <u>the Order of Minister no. 666</u>, <u>dated 03.8.2009 for temporary technical rules</u>, which consider the using of the greek and italian technical rules during the. technical design, construction and safe operation of the transmission and distribution gas systems,.

Technical Rules in the Treaty establishing Energy Community

Technical Rules in the EU Directive 2009/73/EC

Technical Rules in the Treaty establishing Energy Community (ratified by the Albanian Parliament law no. 9501, date 3.4.2006)

Article 21 Within one year of the date of entry into force of this Treaty, the Secretariat shall draw up a list of the Generally Applicable Standards of the European Community, to be submitted to the Ministerial Council for adoption.

Article 22 The Contracting Parties shall, within one year of the adoption of the list, adopt development plans to bring their Network Energy sectors into line with these Generally Applicable Standards of the European Community.

Article 23 "Generally Applicable Standards of the European Community" shall refer to any technical system standard that is applied within the European Community, and is necessary for operating network systems safely and efficiently, including aspects of transmission, cross-border connections, modulation and general technical system security standards issued where applicable via the CEN, the CENELEC and similar normation bodies or as issued

Preparation of Natural Gas Technical Rules and the cooperation MEI-DVGW-KfW

- DVGW standard and role in technical safety management.
- The common project "Translation and adaptation of the technical rules for Albanian Gas Sector", is made supporting and respecting the provisions of the Memorandum of Understanding (MoU) signed by DVGW (German Scientific and Technical Association for Gas and Water) and METE (Albanian Energy Ministry) on December 18, 2009 as well as with the financial support of KfW which allocated a grant from 65 thousand euro.
- For this fund on May 14, 2012 was signed The Support Contract to establish the cooperative relationships between METE, DVGW and KfW.
- The aim of cooperation between Ministry and DVGW is the ۲ preparation of the technical rules for Albanian Natural Gas Sector using the experience of the DVGW, including the adaption to the Albanian legal framework.
- This **DVGW** and Austrian standards (OEVGW) are thought as ۲ indicative and are not foreseen to replace existing engineering rules in the regarding Contracting Party

Memor	andum of Understanding	
-	on the co-operation	
	between the	
Albanian Ministry of Economy, T and Energy	rade and DVGW e.V German Scientific and Technical Association for Gas and	
	Water	
Preamble		
Considering:		
 the objectives and goal of the regional natural gas network and 	Albanian Government to connect Albania with the I further extension of gasification in Albania;	
 the creation of a common energy Community and further integration 	y market in the South-East Europe under the Energy on to the European gas market;	
 the new Albanian gas law approval of gas technical regula 30.06.2008 "On the natural gas s 	ved in June 2008 which requires the development and tion for the Albanian gas sector; (Law no. 9946, date sector", Article 7);	
 that at present the existing Alba to current European technology Standards) and the planned gasi 	nian technical rules and standards do not correspond and European requirements (EC directives, European fication project of Albania;	
 the importance of the harmonisa for the gas sector in the South Ex 	tion of technical rules of legislation and technical rules uropean Countries;	
 the transfer of DVGW technic Community by a common harmo 	al rules to other regional members of the Energy nisation project	
• the experiences and tradition of I	DVGW in setting technical rules for the gas sector;	
 the goals of DVGW to suppor reliability in the gas sector; 	t and to strengthen technical safety and technical	
and whereas		
 the Albanian Ministry of Econo DVGW technical rules in Albani and 	my, Trade and Energy is interested to transfer the a including the adoption to the Albanian framework,	
 DVGW supports the intention Technical rules related to gas a DVGW statutes (e.g. the non-pritechnical rules); 	of the Albanian Ministry by providing the DVGW nd the expertise in setting technical rules respecting ofit character and neutrality in the process of setting	
the Albanian Mini referred as Parties		Memorandum of u
1	his MoU. Details are to be discussed in the context of the signed by both parties.	ne relevant agre
mmin	Time Schedule	
	Parties agree to cooperate for a term of three years starting this MoU.	g from the date
	Amendment of the MoU	





Preparation of Natural Gas Technical Rules and the cooperation MEI-DVGW-KfW

- The DVGW technical rules are in line with European requirements and are already transferred to other regional members of the Energy Community by a common harmonization project.
- --Connection of DVGW-technical regulation for gas to standards (ISO; EN; DIN), and mutual connections of DVGW technical regulation -
- From September 2012 up to third quarter 2014, are completed and approved by the respective decisions of the Council of Ministers 22 gas technical rules which constitute a real contribution in the way of development of the gas sector in Albania. (5 more rules are ready for the approval)

DECKEE		
No. 1030, date 27.11.2013		
ON APPROVAL OF THE TECHNICAL RULES AND THE SECURITY CRITERIONS, FIRST PART, FOR THE LINENUM REQUIREMENTS OF THE TECHNICAL DESIGN, CONSTRUCTION AND OPERATION OF THE TRANSMISSION AND DISTRBUTION CAS SYSTEMEN, DISTALATION OF LICS SYSTEM, UNDERGROUND CAS STORAGES AND DIRECT PIPELINES.	THE	
Based on the article 100 of the Constitution and the point 1 of article 7 of the law no. 9946 30.6.2008 "For the natural gas sector", as amended, with the proposal of the Minister of E and Industry, the Council of the Ministers	, date nergy	
DECIDED:		
1. The approxed of the technical rules and the security criminan, the forp part, for the minimized propriment of the technical design, constructions and operations of the technical design, the installations of LNN system, the strong particles, for the acky operation of the technical rules (are strong to the second second these rules at this decree. In the first part of the technical rules for the gas industry are included the rule the gas transmission system, referring the focales of Pratices as follow below:	imum and direct ached es for	
 Gas Technical Rules, Code of Practice G463 "Gas steel pipelines for operating bar-Construction". 		
- Gas Technical Rules, Code of Practice G466-1 "Steel gas pipelines for operatin 5 bar-Maintenance".	- Ger Tachmical Rel	er Code of Proving G407 "Commencer stations"
- Gas Technical Rules, Code of Practice G469 "Pressure testing methods for tr	- Gas Technical Ru	les, Code of Practice G497-B1 "Supplement 1- the explosion risk zones in
Con Technical Parlies Code of Denstine C400 With analysis measurement	- Gas Technical Rul	es, Code of Practice G499 "Preheating of natural gas in gas plants".
- Oda recumical Rales, Code of Fractice G-too Gas quality measurement - of a recumical Rales, Code of Practice G-491 "Gas pressure regulating st: pressures up to and including 100 bars; designing, production, constru communisionize raid operation".	2 The technical rule of the minister of E security criterion, construction and e installation of LNG	and the security criterions approved with the decree no. 666, date 3.5.2005 concept, Trade and Emergy 'For the approval of the technical rule: and the supportry, for the minimum requirements to the technical design persion of the transmission and distribution natural gay system, the system, the storage spaces and the direct popularity, must be in power up to
 Gas Technical Rules, Code of Practice G492 "Facilities for gas measurement pressure up to and including 100 bar; designing, production, comtra commissioning and operation". 	the complete approvidon't context this de 3. Tail in the full app of the existing infra- the security criterion	a) of the rules and the security criterions of the natural gas systems, as far a creek. proval of all rules and the security criterions for the gas sector, the operation interface of the natural gas papelines will be tagged of the technical rules and in that are a proven in the Republic of Albana before enter an power of thin
	This decree enter in	power after editon in official newspaper. Prime Minister EDI RAMA
with DVCW	"Offic	ial Gazmer" no. 391, doce 96 12 2013
Pregullat Teknike nër Industrinë e Gazit		
Riegunat leknike per Industrine e Gazit		
Kodi i praktikave G 463 - Prill 2009		
Amountation		
Linjat e gazît me tuba çelîku pêr presion operimî mbi 16 bar- Konstruksionî.		
Përstatur nas Winishia Europiai dhe Indostria (IRED		

REPUBLIC OF ALBANIA Council of Ministers

(Non official translati

Minimum requirements of the technical design, construction and safe operation of the transmission and distribution gas systems (Natural Gas Technical Rules)

- Albanian New Gas Law No.102/2015, approved on September 23, 2015.
- In article 10 of new gas law is specify the preparation, adaptation and approval of the gas technical rules and the safety criterions, for the minimum requirements of the technical design, construction and operation of the transmission and distribution gas systems, the installation of LNG system, underground gas storages and direct pipelines"
- In article 10 of new the competent authority " The state Inspectoragas law is specify te for Albanian Gas Sector" who is in charge for control, inspection and supervise the implementation of the gas technical rules. (Actually "The state Inspectorate for Albanian Gas Sector" is included as a part of State Technical and Industrial Inspectorate).
- **Responsabilities and duties of the state Inspectorate for Albanian Gas Sector** are included on the article 101 of the Law no.102/2015, dated 23.09.2015

(uics)	
REPUBLIC OF ALBANIA	
COUNCIL OF MINISTERS (Non official	translation)
DECREE	
No. 104, date 04. 02. 2015	
ON	
THE APPROVAL OF THE TECHNICAL RULES AND THE SAFETY CRI THE SECOND PART, FOR THE MINIMUM REQUIREMENTS OF THE T	ITERIONS, ECHNICAL
DESIGN, CONSTRUCTION AND OPERATION OF THE NATURAL TRANSMISSION AND DISTRIBUTION SYSTEMS, DISTALATION OF LN	, GAS IG SYSTEM,
UNDERGROUND GAS STORAGES AND DIRECT PIPELINES.	
Based on article 100 of the Constitution, and point 1, article 7 of the ray law	no 9936 date
30.06.2008, "On the natural gas sector", as amended, with the proposal of the Mini	uter of Ecergy
Decided	
1. The approval of the technical rules and the safety criterions, part two. for	the minimum
requirements of the technical project, construction and operat transmission and distribution systems, of the LNG installations, g	
gat pipelines for the taflety operation of the natural gat systems, tents attach this decree.	Technical rules for Gas Indentes, code of spectrum G 1000. "Recomments on the
2. In the second part of the technical miles for the ess industry are i	qualification and organization of companies for the operation of facilities which works astronomical and an experimentation of the second seco
transmission system, refer to the code; of practice and the s	 Technical rules for Gas Industry, code of practice G 1010, "Requirements on the outlification and commission of coverstors of natural ars mutualitations on industrial
 Technical rules for Gas Industry, code of practice G 260, "Gas 	nites" - Technical rules for Gas Industry, code of practice GW 12, "Design and installation of
 Technical rules for Gas industry, code of practice G 280-1, G Technical rules for Gas industry, technical instruction G 	eathodes protection (CP) for underground storage tasks and steel pipe." Technical rules for Gas Industry, code of practice GW 16, "Cathodes Protection (CP)
Calibration of the odorant measuring instruments." - Technical rules for Gas Industry, technical instruction G 46	of Bursel Storage Tasks and Steal Pipes - Remote Monitoring." - Technical rules for Gos Industry, code of practice GW 350, "Welded joints on steel
 protection of devices and appliances for gas pressure control a Technical rules for Gas Industry, code of practice G 49. 	 pipelines in the gas and water supply; Fabrication, testing and assessment." Technical miles for Gas Industry, code of practice GW 1200, "Principles and
Maintenance."	organization of the stand-by service for gas utilities and water distribution comparise."
	 Technical males for Gas Industry, technical instruction GW 14, "Repair of local defects in protective coatings of florous metal pipes."
	 Lecture in mass for cost managing. Regulation of the high pressure gas pipelines. Level share of the right way which is conflict with the technical male and the coffet.
	criterioni, approved in this decree and in the decree no. 1030, date 27.11.2013, "On means of the technical webs and the volter orientees not one for the means of the technical set."
	requirements of the technical project, construction and operation of the natural gas transmission and distribution voteres, of the LNG installations, size streams main and the
	gas pipelizes", is repealed.
	 Are in charged to implement this decree the Ministry of Energy and Industry, the Ministry of Urban Development and Tourism, the Ministry of Finance and the Ministry
	of the Environment.
	This denses enter in force after is published in "Official Gamets".
	Prime Minister
· ·	LDI RAMA
DVGW	
Rregullat Teknike për Industrinë e Gazit	
Kodi i praktikave G 1010 - Nëntor 2005	
Autorizate reja DVDW	
Kërkesat teknike për kualifikimin dhe organizimin e	
operatorëve të stacioneve të gazit natyror në zonën industriale	
Përshtatur oga Ministria Energjisë dhe Industrisë (MEI)	
Drejtoria e Politikave dhe Zhvillimit të Hidrokarbureve waw energita gov al	
TIRANÉ 2014	

Preparation of Natural Gas Technical Rules and the cooperation MEI-DVGW-SECO

- Considering continuation of the project "Translation and adaptation of the technical rules for Albanian Gas Sector", as one of the important obligations of the Ministry within the completion of the legal framework, institutional, regulator and technical for Albania gas sector, from our part are taken all necessary steps that this job proceed further with the second part of the technical rules package predicted in the Memorandum of Understanding (MoU) with DVGW, enabling to have a full package of the technical rules for Albania Gas Sector.
- To accomplish this second phase of the project "Translation and adaptation of the technical rules for Albanian Gas Sector" it is predicted a further fund of 150 thousand euro, from the Project Agreement that the Ministry of Energy and Industry has signed with Swiss Government represent by SECO (State Secretariat for Economic Affairs) on 18.03.2015.

Preparation of Natural Gas Technical Rules and the cooperation MEI-DVGW-SECO

- The approval in principle of this Agreement is done before on 25.02.2015 with DCM no.170
- "For approval in principle of the Project Agreement between the Council of Ministers of the Albanian Republic and the Swiss Confederate Government, about the grant and financial assistance of the project: "Raising of the capacity for large scale developments of gas infrastructure in Albania II", ratified by the Albanian Parliamnet by the law no 58/2015, dated 28.05.2015.
- The aim of the Project as regard the technical rules, is the preparation of a basic package of the technical rules for the Albanian natural gas sector (27+52=77 tech. rules), including their adoption to the Albanian legal framework using the experience and expertise of the DVGW.



Procedura e punës	Kontributi	Shuma
Aftësi teknike të lidhura me infrastrukturën e gazit		
 Strategjia dhe politika e sektorit. 	euro	815,000
 Legislacioni, lejet, si dhe kuadi ligjor dhe regulines i favorshëm për shvillimin e sektorit të gati në përputhje me direktivat e BE-së. ("maktimmmi 150,000 euro të buzhetit të procedurës së panë: 2 janë caktuar për mirstimin dhe përkhimin e reguline të DVGW-së ne ligjin shqipta). 	euro	1,100,000*
3. Përfshirja gjatë zhvillimit të Projektit (**nakkimumi 300,000 euro të buzheti të procedurës së punës 3 janë caktuar për financinin e studimit të fizibilitetit për të lidhur Termocentralin e Vlorës me	euro	1,230,000**

V.- Safety and technical requirements for gas infrastructure

Principles for Pipeline Safety

- 1. Governments should provide leadership and create and maintain administrative frameworks to facilitate the development of a safe and environmentally sound transportation infrastructure, including pipelines.
- 2. The pipeline operator and/or owner has primary responsibility throughout the whole lifecycle of its systems for ensuring safety and for taking measures to prevent accidents and limit their consequences for human health and the environment. Furthermore, in case of accidents, all possible measures should be taken to limit such consequences.
- 3. Pipelines for the transport of hazardous substances should be designed and operated so as to prevent any uncontrolled release into the environment.
- 4. Leaks from any part of a facility or pipeline that contain hazardous substances should be recognized adequately in a quick and reliable way, especially in environmentally sensitive or highly populated areas.
- 5. The pipeline operator should implement a management system to develop and maintain the integrity of pipelines. The integrity of pipelines should be ensured through adequate design, construction, maintenance, inspection and monitoring and through sound management.
- 6. Deterministic and/or probabilistic approaches should be used in evaluating pipeline integrity and impacts on human health and the environment.

Safety and technical requirements for gas infrastructure

- 7. Appropriate measures should be taken in case of accidents. Emergency plans should be established by pipeline operators (internal emergency plans) and by authorities (external emergency plans) and should be tested and regularly updated. These plans should include descriptions of the measures necessary to control accidents and limit their consequences for human health and the environment.
- 8. Land-use planning considerations should be taken into account both in the routing of new pipelines (e.g. to limit proximity to populated areas and water catchment areas to the extent possible) and in decisions concerning proposals for new developments/construction in the vicinity of existing pipelines.
- 9. Pipeline operators and the authorities responsible for pipelines should review and, if necessary, develop and implement systems to reduce third-party interference, which is a main cause of accidents, including their transboundary effects.
- 10. Information on the safety of pipelines, the geographic position of pipelines, safety measures and the required behaviour in the event of an accident should be supplied to persons likely to be involved in case of a pipeline accident. General information should be made available to the public.
- 11. Regular exchange of information between pipeline operators and authorities

regarding good practices, improvement of pipeline safety, and past accidents and near-miss cases should be considered.

Safety and technical requirements for gas infrastructure

Crude oil, its derivatives and natural gas are among the major substances transported by the region's pipelines.

• If well-constructed, carefully monitored and properly attended, pipelines can be a safe, environmentally sound and economical means of transport.

Regulation of the high pressure gas pipelines

According to DCM no. 1030, dated 27.11.2013, and DCM no.104, dated 4.02.2015

- safety requirements during pipeline construction
- safety requirements when operating
- safety procedures for working on high pressure gas pipeline
- arrangements for the regular training of personnel
- procedures for testing of the transmission line projects
- commissioning and prohibiting the pipeline operation
- requirements for the establishment of the expert
- proof of the qualifications and equipment

Safety and technical requirements for gas infrastructure

• Safety First, but Other Factors are Important

- safety and technical requirements for gas infrastructure, quality of gas supply, obligations of distribution system operators and retailers as well as the quality of LPG supplied in cylinders
- gas fitting work and installing or commissioning gas appliances
- reporting of gas related accidents
- licensing of gas entities covering areas such as exemptions, licensing fees and license conditions for gas retailers outlining requirements such as pricing information for small customers and matching available gas to aggregated demand
- **Residential Energy Efficiency Scheme** the scheme outlines areas such as energy efficiency activities, energy audits, energy efficiency arrangements for retailers and energy efficiency shortfalls
 - safety, reliability, maintenance and technical management plans and reports.

VI.- The most advanced technical standards in the safe design and construction of the TAP pipeline

 TAP AG company by upholding of the most advanced technical standards in the design and construction of the TAP pipeline, has defined an optimum ratio for technical and financial land administration where the pipeline will passes.

(Based on the Host Gavernmental Agreement between Albanian Government and TAP AG, ratified by the law no. 116/2013, dated 15.04.2013)

- The safety and consultation zone restrictions and requirements shall comply with best international practice and relevant European Standards (EN 1594:2009 as updated from time to time), including with respect to the following safety areas:
 - a).- A protection strip shall be established to control all third-party activities in order to safeguard the pipeline against interference. Based on relevant legislation in neighbouring countries this zone shall have a width of 8m (4m on either sides of the pipeline).
 - b).- A safety zone shall be established to ensure an adequate distance from buildings.Based on relevant legislation in neighbouring countries this zone shall have a width of 40m (20m on either side of the pipeline).
 - c).- A building restriction zone with a width of 400m (that is, 200m on either side of the pipeline) shall be established in which the number of individual houses shall be managed in accordance with the Greek Technical Regulation No D₃/A₇0k.4₃0₃ nE 2610.
 - d).- Consultation zone shall be established in which individual houses may be tolerated, but which should not be used by clusters of houses, buildings used by vulnerable populations (schools, hospitals, prisons etc.) and/or industrial facilities that either host large numbers of people (>300) or that are specifically exposed to fires etc.

	SHTOJCA 2
	STANDARDET
	PJESA 1
	STANDARDET TEKNIKE DHE TË SIGURISË
Stand	artet e zbatueshme për gazajellësit dhe stazionet:
(1)	Rregultat teknike dhe standartet e sigurisë në fuqi në Greqi (sipas Vendimit të Ministrit nr. 666 datë 3 Gusht 2009 nxjerrë sipas Nenit 7 (2) të Ligjit për Gazin)
(2)	SE Standard Evropian
(3)	DE Direktiva Evropiane
(4)	ISKA Instituti i Standapleve Kombëtare Amerikane
(5)	IAN Instituti Amerikan i Nafilis
(6)	SHAIM Shoqata Amerikane e Inshinieröve Mekaniké
D	SHATM Shoqata Amerikane e Testimit dhe Materialeve
8)	DNV Det Norcke Veritas
(9)	DIN Drutsche Institut für Normung
10)	KNET Kemisioni Ndërkombëtar Elektro-Teknik
(11)	OSN Organizata E Standarteve Nděrkombětare
(12)	UNT Unioni Ndérkombètar I Telekomunikacionit
(13)	SHSP Shoqata e Standartizimit të Prodhuesve
Nése, kérkes dyja k pérpar	sipas Ligjit Shqiptar, çdo Pjeshnarrisi në Prejekt i kërkohet të jetë në përpathje me at lidhur me sigarinë dhe kërkesat lidhur me mbrogijen e mjedisit, për na sa përputhja me të ëto kërkena mik është anyvalimërisht praktike, kërkesat lidhur me sigurinë do të kenë ësi.

		PJESA 2
	STAN	DARTET E SIGURISË, SHËNDETIT TË KOMUNITETIT DHE ATO MJEDISORE E SOCIALE
	Direktiva 85/337/EEC e Këshillit të Evropës datë 27 Qershor 1985 ashi vlerësimin e efekteve në mjedis të projekteve të caktuara publike dhe private	
	Komisioni Ekonomik i Kombeve të Bashkuara për Konventën Evropiane mbi Akaesin në Informacion, Pjosëmarnjen Publike në Vendimmarnje dhe Akaesin në Detjolsi në Çështjet Mjodisore (Aarhun, 1998)	
ι.	Konventa Espoo	
ι.	Kérkesat e Performancés ně víjim té detajusra ně Politikat Sociale dhe Mjedisore:	
	(8)	PR 1: Menaxhimi dhe Vlerësimi Social dhe Mjedisor
	(b)	PR 2: Kushtet e Panës
	(c)	PR 3: Pakésimi dhe Parandalimi i Ndotjes
	(d)	PR 4: Sigaria, Mheojta dhe Shëndeti
	(c)	PR 5: Përftimi i tokës, Ri-sistemini Jo-Vullnetar dhe Zhvendosja Ekonomike
	(f)	PR 6: Bashkébisotimet e Bio-diversitetit dhe menashimi i pandépreré i Burineve Natyrore té Jetesis
	(g)	PR 7: Popujt Indigjenë
	(h)	PR 8: Trashilgimia Kulturore
	(i)	PR 10: Përhapja/Zbulimi i Informacionit dhe Angazhimi i Paléve të Interesuara
	Marre	ivestja Globale Kompakte e Kombeve të Bashkuara për të Drejtat e Njeriut
	Parittet Udbärsene pär Bärnen dhe të Drejtat e Njeriot të nënshkruara nga Këshili i Kombeve të Bashkuara për të Drejtat e Njeriot më datë 16 Qersher 2011.	
	Parim Shork najert	et Vullnetare të sigurisë dhe të të Drejtave të Njerist të zhvilkaara nga Qeverisë e rve të Bashkuara dhe të Mbretërisë së Bashkuar, shoqëri të caktuara në sekterët e jes dhe të energjisë dhe organizata të caktuara jo qeveritare
	Stand Strate Finan	artet sociale dhe mjedisore sipas specifikinneve të Mansalit të Investinneve gjike të Komunitetit të krijuar dhe të përditënar herë pas here nga Organizata cisne Ndërikombëtare.

Hum 7

The most advanced technical standards in the safe design and construction of the TAP pipeline



 Similar restrictions shall apply to safety and consultation zones around the compressor stations and other infrastructure associated with any such pipelines. The width of such zones shall be defined by a quantitative risk assessment.

What to do further for safe implementation of technical

rules?

INSTEAD OF CONCLUSIONS

Fulfilment of it following conditions needed for safe implementation of technical rules:

- <u>Use of appropriate equipment and materials</u> (authorized labors registers of approved equipment)
- <u>Licensing of companies</u> (gas operator companies, their partners on pipeline construction and maintenance)
- Licensing of experts working in the gas sector (expert network in the region according to the specific fields: gas transmission, distribution, usage (residential, industry), regulation and metering
- <u>Permanent education of all people</u> included in the gas sector from top management to field workers (specialized training centers / institutions)
- <u>These conditions should be provided by responsible state institutions together with gas</u> <u>companies – A support of ECS would be very useful</u>

Technical rules prepared through the Project, and Project itself give answers how to do that.

- Technical rules have **to be actual**, have **to be updated** based on technical progress, or generally speaking, technical rules have **to be prepared by experts and used by experts**. Unfortunately, the most often case is that ministries and/or agencies **can't fulfill this requirement** and follow this process alone, so is necessary to continue the cooperation with foreign contributors, with DVGW, and the Energy Community Secretariat.



Progress on the improvement of the safety requirement for the gas infrastructure system in Albania

2nd Tirana Gas Pipelines Safety Workshop "Step by step approach" Tirana, 20th April 2016

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