




ROMANIAN PETROLEUM LEGAL AND REGULATORY FRAMEWORK

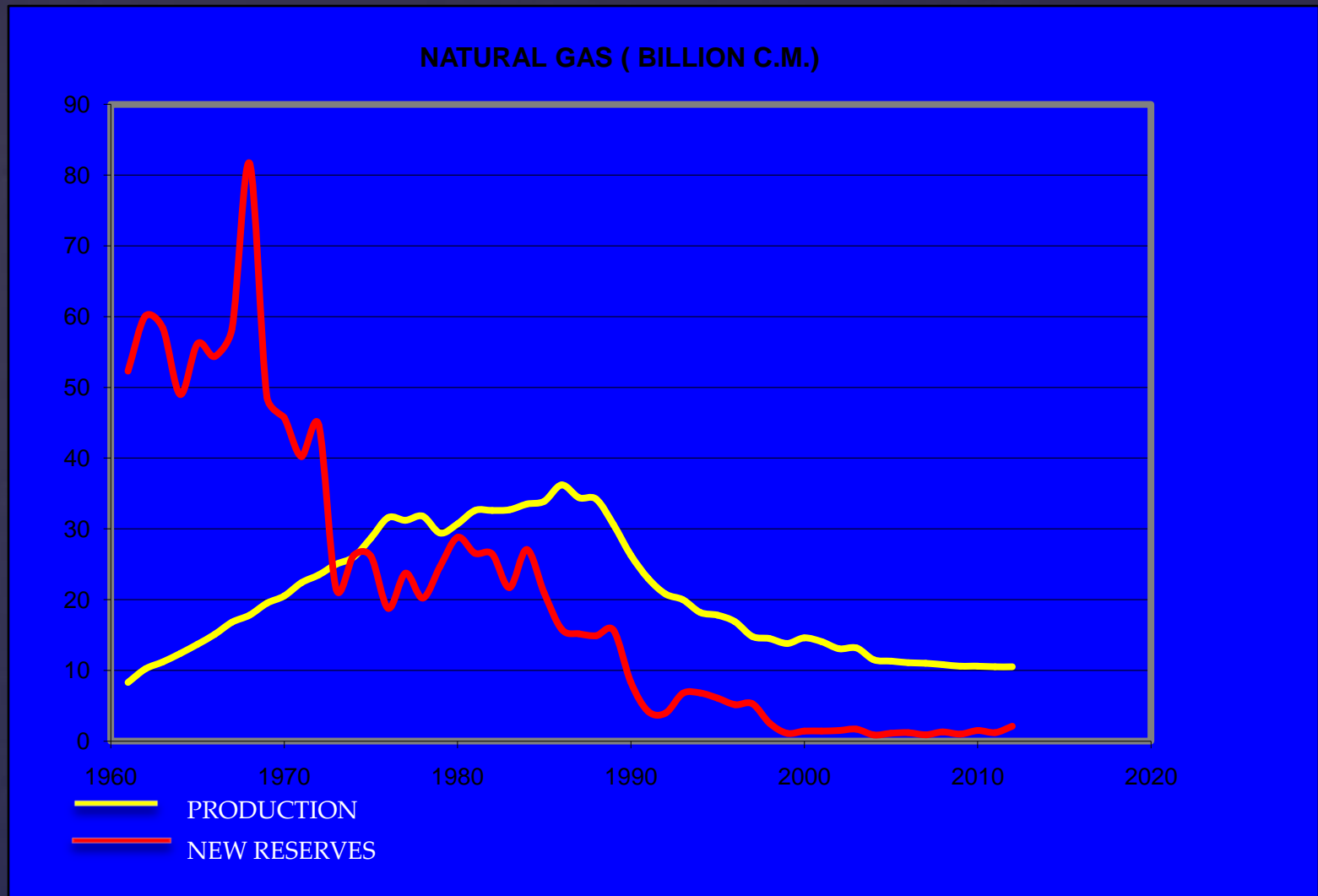
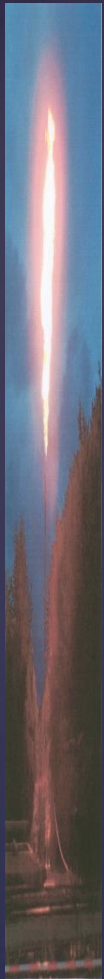
FROM EXISTING PROVISIONS TO NEW REGULATIONS:

UNCONVENTIONAL GAS DEVELOPMENTS

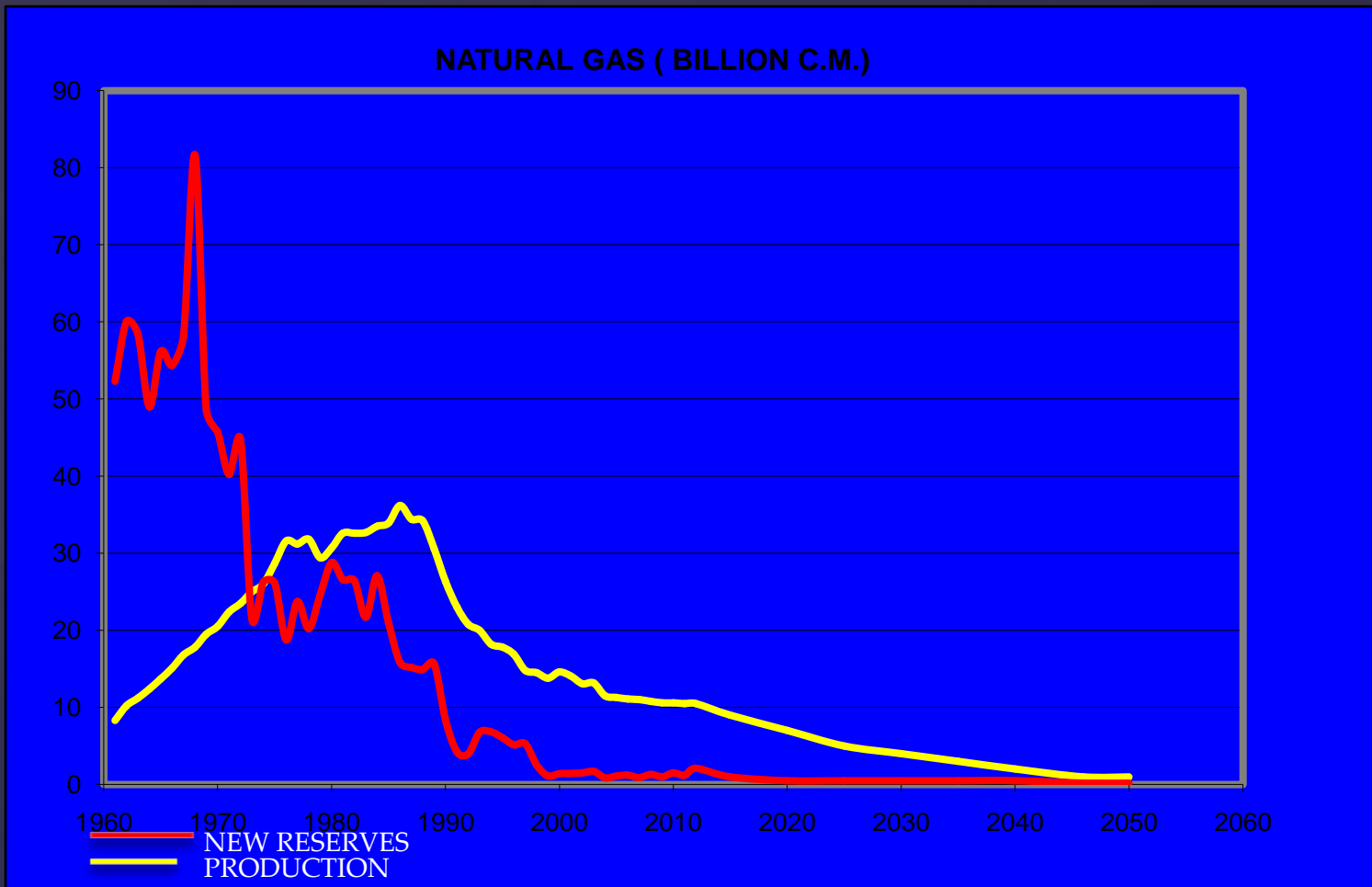
Mihai Silviu German



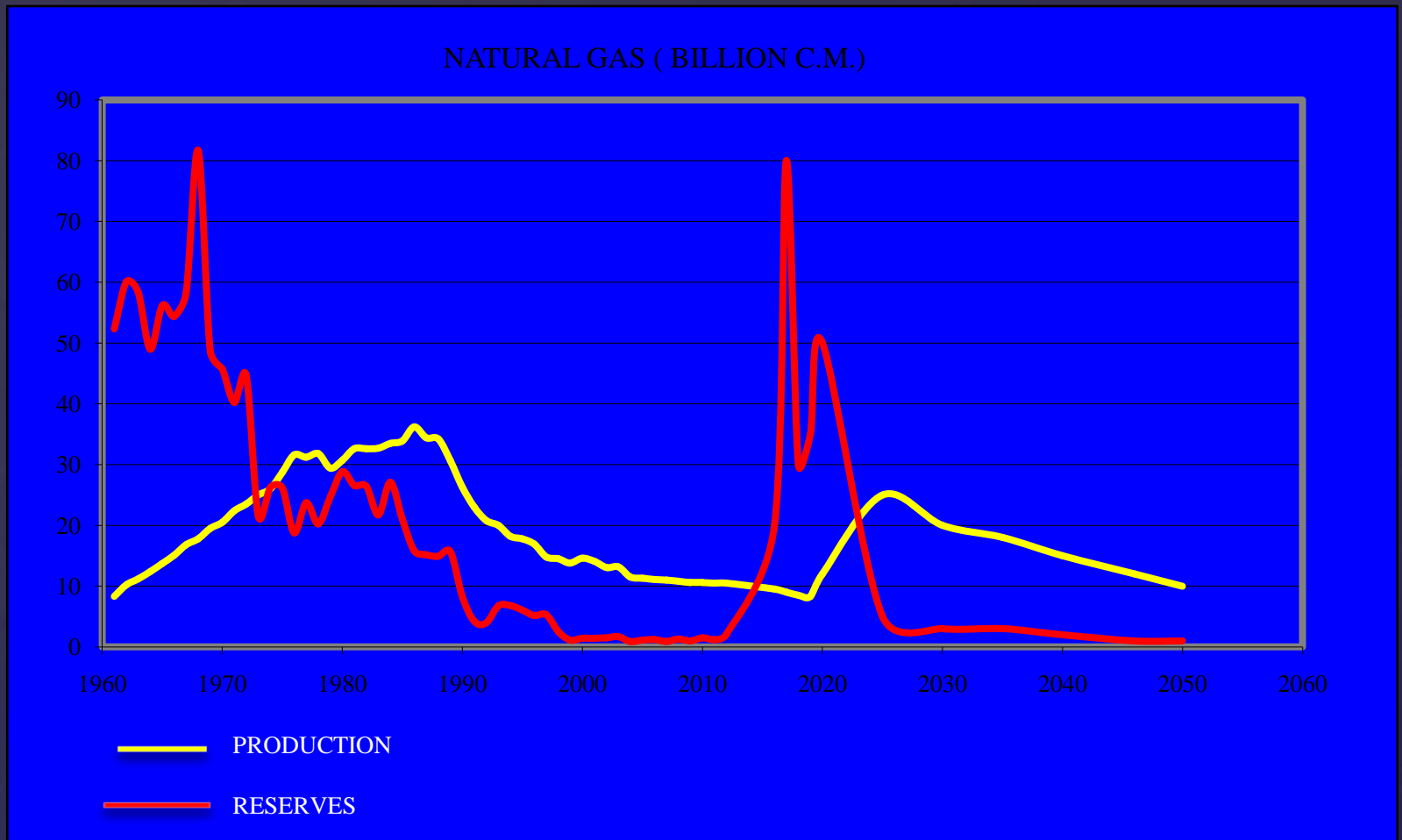
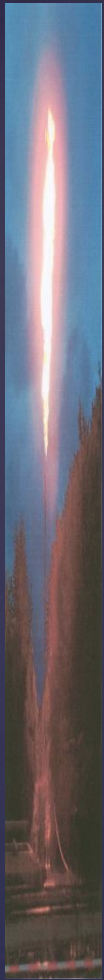
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The Science, Technology and Best Practice
Bucharest, March 11-12.2013



Evolution of the Romanian gas production versus discovery of new reserves



SCENARIO 1 - The current trend will be maintained and Romania will face a decline of production to a level below 1 billion c.m./year in 30-35 years.




SCENARIO 2 - New discovery off-shore, deep on-shore and significant reserves of unconventional gas can generate a new era of the Romanian gas sector.



FACTS:

- ❖ Shale gas represented 23% of total gas production in U.S.A in 2010 and is projected to account for 47% by 2035;
- ❖ Huge estimated reserves can cover the current USA production for 100 years;
- ❖ The gas prices decreased in US by 50% comparing with the price existing before the beginning of shale gas production
- ❖ Other countries such as Canada, Argentina, China, Australia, UK, Poland, Ukraine started to develop projects for exploration and production of shale gas.



“Is the Romanian petroleum legislation applicable to the unconventional gas?” - question asked often by the opponents of the development of unconventional gas in Romania

Romanian petroleum legislation does not make any distinction between different categories of natural gas classified on different criterias such as: biogas and termogaz, light gas (more than 95% methan) and heavy gas (methan associated with etan, butan,..) produced from sandstone, silt, coal, shale or basement, located in structural, lithological, hidrogeological, or other type of trape, associated with oil and nonassociated, or conventional, produced from higher permeability formations (1-1000 mD) and unconventional as shale gas, coal bad methan and tight gas produced from law permeability formations (1 nanoD- 1mD).

Answer: absolutely yes: "unconventional gas" are "natural gas" and consequently the petroleum legislation it is fully applicable.



ARTICLE 136 ROMANIAN CONSTITUTION

(3) Riches of public interest of the subsoilthe natural resources of the economic zone and the continental shelf, and other goods established by law, shall be exclusively public property.

(4) The public property goods are inalienable. They can be managed by autonomous administrations or public institutions or may be given under concession or rented ... in the conditions imposed by organic law.

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PETROLEUM LAW NO. 238/2004


- Applicable to the "up-stream" petroleum activities, on the exploration, development, exploitation, abandonment and transport by the national transportation system;
- Applicable to all existing on-shore and off-shore petroleum resources as gas or liquid, with no distinction between conventional and unconventional;
- Exploration and production of oil and gas resources is done through tax- royalty concession agreements, which are agreed upon with National Agency for Mineral Resources, established by law as the competent authority, which shall enter into force after approval by Decisions Government;
- Duration of the petroleum agreements is 30 years with the possibility to be extended by another 15 years;
- The Concession Agreement remains unchanged throughout its duration, thus ensuring fiscal and trade stability. Rights and obligations of title holders, including the royalty levels are maintained throughout the entire duration of the petroleum agreement, unless the parties agree to change by addendum;

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Bucharest, March 11-12.2013



PETROLEUM LAW NO. 238/2004

- Romanian and foreign companies are treated on a non-discriminatory basis;
- Foreign companies are allowed to export oil products;
- Title holders are required to establish a deductible provision for abandonment and environmental remediation, throughout the life of the field;
- The right of use of and access the land necessary to conduct the petroleum operation, is enforced in accordance with other laws covering this issue.
- The rights and obligations of title holders including assignment, association, unitization, arbitration, fall under the mandates of both Romanian and international arbitration courts




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Bucharest, March 11-12.2013



Methodological Norms for the application of the Petroleum Law No. 238/2004 , approved by the Government Decission No. 2075/2004, stipulates:

- Clarified the regime of the data and information necessary to carry out the operation agreed in the concession agreement and confidentiality terms;
- Established the procedure of organizing licensing rounds for the concession of exploration and production petroleum blocks on transparent and non-discriminatory basis;
- Detailed the title holders, right and obligations during the exploration, development and production phases;
- Provided the classifications of petroleum resources and reserves;
- Clarified the assignment procedure.

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Directive 94/22/EC

As member of the EU Romanian petroleum legislation is alligned to the european legal frame, represented only by the Directive 94/22/EC

- The main goal it is to grant a non-discriminatory and transparent access to resources for EU member states;
- Makes no difference between crude oil and natural gas and much less between conventional and unconventional resources ;
- Does not impose any restrictions to apply specific technology used in the petroleum operations such as hydraulic fracturing ;
- The directive does not contain any specific requirement treating risk and environmental impact but makes it possible for Member States to draft authorization conditions aimed at preventing environmental impacts if it deems it necessary.




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FIRST CONCLUSION :

ROMANIAN PETROLEUM LEGISLATION IS TOTALLY COMPATIBLE WITH THE AQUIS COMMUNAUTAIRE, IS TRANSPARENT AND NON-DISCRIMINATORY BETWEEN ROMANIAN AND FOREIGN INVESTORS, FULLY APPLICABLE TO UNCONVENTIONAL GAS AND HAVING NO RESTRICTIONS FOR ANY TECHNOLOGIES USED IN THE PETROLEUM OPERATIONS, INCLUDING HYDRAULIC FRACTURING



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Bucharest, March 11-12.2013

REGULATORY FRAMEWORK

Romania

- ❖ The Competent authority empowered by the Petroleum Law No. 238/2004 for issuing regulations in the up-stream oil and gas is the National Agency for Mineral Resources.
- ❖ The regulation issued via NAMR's President Orders applicable to the unconventional gas operation are :
 - Order 101/1997 - Evaluation, classification, confirming geological resources and reserves and the framework of the studies
 - Order 102/1997 – Management of the national reserves and resources fund
 - Order 41/1998 - Regime of the exploration wells, reporting request and deadlines for transmission of data, information and documentation obtained in the petroleum operations and the measurement and record of crude oil production
 - Order 43/1998 - Content of the studies to deliniate the petroleum production blocks
 - Order 98/1998 – Methodology for establishing the reference price for petroleum (oil and gas) extracted in Romania
 - Order 150/2005 - detailed content of the Petroleum book
 - Order 1/2006 - Change of the regime of the wells and the necessary approvals for the experimental production
 - Order 122/2006 - Methodology for the certification of the technical competence
 - Order 194/2005 – Content of the annual production program
 - Order 8/2011 - Approvals for the preservation and abandonment of the wells, respectively, resumption the petroleum operations after preservation or abandonment
- ❖ **No specific provisions concerning the exploration and production of unconventional gas apart from the existing regulations, listed above, that are generally applicable to all categories of hydrocarbons.**

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REGULATORY FRAMEWORK

European Union

- In the Member States of the European Union, the situation differs from country to country due to common lack or low level of regulations for unconventional gas, as normal for a new activity. In some countries are performing studies that will assist policy makers and regulatory authorities in establishing a new and supporting regulatory framework.
- In support of this regulatory process the International Energy Association (IEA) has developed and proposed a new set of rules for unconventional gas projects. These rules are not compulsory, but propose a code of good practice that can be transposed into shale gas regulations in the EU Member States.
- One of the recommendations of the European Parliament, Committee on Industry, included in the draft report in March 2012 is to expedite the exchange of best practices between the EU and the U.S., taking into account U.S. rich experience and minding the specific economic, social, legal, institutional particularities.

REGULATORY FRAMEWORK

United Kingdom

On 1st February 2013, UK Offshore Operators Group published UK Onshore Shale Gas Guidelines (exploration and appraisal phase) mentioning the main regulation that concern shale gas well integrity, as:

- well design and construction, borehole sites and production phases, borehole site safety;
- suspension/abandonment;
- independent well examination, management supervision and competence;
- fracturing flow back and well testing equipment and operations;
- risk identification and assessment;
- casing and cementation design including groundwater isolation;
- mitigation of seismic inducing by hydraulic fracturing;
- pre-fracturing injection tests;
- fracturing operations disclosure, fluid composition disclosure (on the web-site www.ukoog.uk equivalent with FracFocus), flow back fluids disclosure;
- fluid transport and storage, fracture fluid disposal, water sources and use/re-use;

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REGULATORY FRAMEWORK

United States of America

In addition to federal acts, generally applicable in USA to all types of hydrocarbons, a number of regulations are locally applicable, at the level of state or petroleum basin take into account the geological, technical, economic or environmental differences: Among the areas covered by this regulation (Charlet Groat et. al., 2012) there are:

- Minimum requested distance between well drilled, well sites and/or storage pits, and natural and domestic resources, private water wells, public water supply, structures/dwellings, streams, wetlands;
- Stormwater management regulations- stormwater permits and best management practices;
- Well drilling process: casing, cementing and blowout prevention: depth of surface casing below lower fresh groundwater, strength of surface casing, restriction on reuse of surface casing, cementing, logging;
- Air emission control during drilling and fracturing: requirements for rig and dehydrator stack height, exhaust muffing, gas venting and flaring, VOC capture, compression station permitting;
- Withdrawing water for fracturing: permits, reporting
- Regulation of the fracturing process : chemical disclosure, direct public access to disclosed chemicals;
- Spill : prevention, control, clean-up, remediation and reporting;
- Drinking water sources : requirements for baseline testing and source replacement, water supply replacement by operator;
- On-site fracturing waste storage: flowback water, liner requirement, freeboard requirement, timing of pit closure for flowback
- Drilling and fracturing waste disposal: drill cutting from water- based drilling, drill cutting from petroleum-gased drilling, flowback, produced water
- Site Remediation

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CONCLUSIONS

- ❖ Petroleum legislation in Romania is applicable to all types of hydrocarbons regardless of the generation, geological and petrophysical characteristics of the fields, or technologies applied.
- ❖ The petroleum legislation imposed basic rules of capitalization of crude oil and natural gas resources by concession following licensing rounds and concluding petroleum agreements of tax-royalties similar to those used in majority European countries.
- ❖ Petroleum legislation establishes two important principles: non-discrimination treatment to different title holders and stability of the contractual terms.
- ❖ Romanian petroleum legislation proved to be an workable legal framework that developed exploration by tenth of new concession agreements
- ❖ The Romanian petroleum legislation is compatible with EU, a full transposition of directives in this area was completed in 2007.
- ❖ Petroleum legislation provided an workable framework proved by a number of tenth of concession agreements in force, concluded and aproved based on existing provisions

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CONCLUSIONS

- ❖ Secondary legislation established by regulation and technical instruction differs from country to country and from a petroleum basin to another, depending on geological features, technological, economical or social or environment preservations requirements.
- ❖ As a new domain in Europe the exploitation of shale gas by hydraulic fracturing the regulatory framework can be characterized as incomplete in terms of implementing technical instructions, regulations, codes of practice, monitoring and control rules .
- ❖ Currently the European countries interested in unconventional gas activities aimed at establishing adequated regulations, by their own expertise and taken into consideration the experience developed by countries such U.S.A.
- ❖ **Finally we propose to the regulatory authorities to evaluate the opportunity to issue specific regulation for unconventional gas activities, that will give policymakers, NGOs and population confidence that the risks are minimized and managed.**

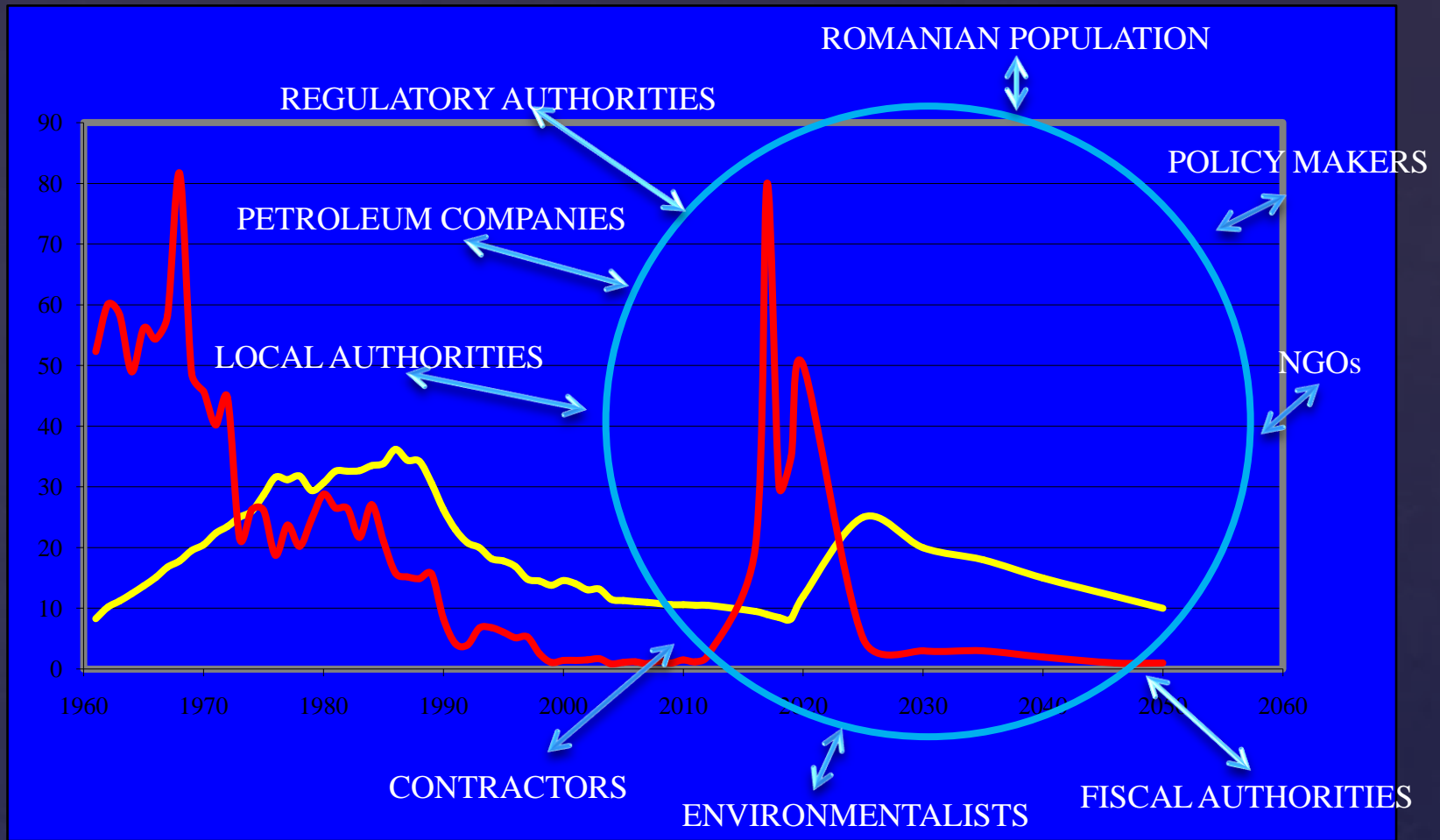
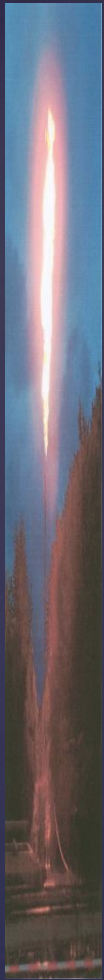
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Questions asked to the opponents of the shale gas activity in Romanian:

- Do you really believe countries as USA and Canada advanced in unconventional gas activities, known for having a strong regulatory framework, allow dangerous activities on their territories ?
- Do you know a single example of significant environmental incidents caused, without any doubt, by hydraulic fracturing ?
- Do you believe that Romania is in a position to refuse the opportunity to secure a higher degree of energy independence offered by unconventional resource developments ?

As an possible answer to this last question we strongly believe that managing the risk through an appropriate legal, regulatory, monitoring and control framework, Romanian oil industry may experience a revival by this new opportunity ...



... and will build a win-win unconventional gas development, environmental friendly and safe

Thank you