



## **“The Nuclear Option for South East Europe” IENE/ROEC conference**

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TOPIC: Legal, Safety and Regulatory Issues

Ladies and Gentlemen,

I fully appreciate the initiative to organize a complex, up to date theme oriented event on the role of nuclear energy in the upcoming future, all the more since we can corroborate on the relevant experience of several states present here today.

I'll start by claiming that given today's European energy framework, policies and needs, nuclear energy stands a very good chance in actually proving how effective a solution it may be. Europe, as well as other parts of the world, need a stable, constant, clean solution to meet long-term targets, and, even if some advance other solutions, mostly advocated on high risk perception associated to nuclear, cold technical and economic facts, strongly emphasize the need for reliable approaches supported by reliable sources.

As both EU member states and new build oriented states acknowledge the role of nuclear, it is entirely up to the nuclear industry to demonstrate how good and reliable it may be in this process. Which brings us to the theme of our panel.

Safety, regulatory and legal issues: bottom line: the very basic of nuclear efficiency and long-term contribution acknowledgement. The industry itself has long passed the stage of independent assessment and subsequent implementation, it has further moved to the vital stage of harmonizing nuclear safety to regulation and to legal provisions. European and other world organizations have taken significant steps in making this harmonization of safety requirements a reality, however an in-depth knowledge of technical and physical issues on one hand and cultural bound issues and multidisciplinary communication, on the other hand, are and should be a constant concern of the industry.

Efficient regulation is the result of developing common approaches and common sets of measures to nuclear safety and strong independent, legislation capable to assess norms and standards of nuclear safety. The essential information is derived from thorough assessment and understanding of the design details, day to day operation, events, research activities from all over the world that should eventually result in a deep understanding of the interaction and integration of the safety factors. For this to be achieved, there's a need of constant flow of information based on experience exchange in a bidirectional way: internal and

external factors as well as the established relations among these factors, as we have witnessed such flaws in the case of the Fukushima accident.

The integration of all the data must be supported by strong, independent national regulators whose assessment should be highly supported by effective national legal frameworks. Such national legal frameworks serve the purpose of going beyond the recommended good practices of the industry, even beyond the voluntary safety assessments of the utilities and establish both industry and cultural adapted requirements in such a way as to provide the regulators with efficient oversight mechanisms in case of both the existing safety factors and prompt reaction to new challenges.

Any state owning and operating nuclear should base its activities on complex, accurate legal framework addressing: production, safe operation, safety culture, waste management and decommissioning, transport of nuclear materials, environmental protection, liability, compensation and insurance for nuclear damage. Therefore, a complex understanding of the international related legislation is extremely useful in assessing the internal one and filling in the gaps to ensure a reliable and nuclear driven domestic legal framework.

It is our priority to harmonize the national legal framework with the internationally recognized standards in all of the above mentioned fields by requesting adequate international support whenever the government or the affiliated institutions have a growing demand in adjusting legislation based on the international legal update.

A solid national nuclear program, regardless of its development phase, depends on a solid related legislation. Any expansion of the nuclear program, future refurbishment necessities, spent fuel repositories require an all-angle approach of both the national and international legal framework.

Last, but not least, it is extremely important to comprehensively assess the relationship between nuclear and non-nuclear related legislation because as noticed there are instances when conflicting legislation could impede the proper and timely development of nuclear projects.

The Fukushima accident has provided the international nuclear community with a lot of lessons, mostly regulation related, therefore the main purpose of the joint efforts within the nuclear industry still need to address continuous enhancement of safety features and simultaneously reduce differences between states. The very results of the recently performed stress tests reveal that there is always room for improvement, that both operators and regulators should have a very clear understanding of all the possible events and scenarios beyond the design basis.

We'd rather have the industry and the world talk about addressing regulatory failures and complex risk management than have the world talk about the failure of addressing such issues.

A nuclear accident knows no boundaries or limitations in terms of perceived effects, and through direct experience and I can fully relate the impact of Fukushima accident on the Romanian nuclear industry, both domestically and abroad during the road-show for the IPO: they basically refer to interdisciplinary communication in addressing risk and implementing countermeasures, namely: delays in implementation, communication gaps between different level of experts, review of earlier predictions and therefore addressing uncertainty, voluntary safety efforts on behalf of the utilities vs legal based complex regulatory standards, PSA (probability safety assessment), the very basis of accident management, limited to internal rather than internal-external events. Moving further: the challenge of governance issues,

oversight and readily applicable chain of command in order to identify the whole scale of risks, institutional structures and management practices to enable adequate management prior and after the accident.

While strong in relation to technical, nuclear-generating risk related situations, Fukushima has brought upfront the regulatory failures associated to natural risk. This has required for a deeper understanding of the causes, of a comparison between regulatory best practices and gaps to be filled in, proactive approach for beforehand key initiatives.

The measure of stress tests helped reveal some of the above mentioned invoked factors, therefore nuclear safety managed to further enhance its capability to address potential events beyond the design basis and possible cliff-edge effects (severely abnormal plant behavior caused by an abrupt transition from one plant status to another following a small deviation in a plant parameter, and thus a sudden large variation in plant conditions in response to a small variation in an input.). These assessments confirm that the design basis includes rare yet predictable events or apply measures to extend the design basis as to include such events, improved all-risk approach, organizational structure and safety oversight, preparedness and accident management as well as emergency preparedness.

In conjunction with the regulatory challenges, there is another lesson with a strong impact on the nuclear industry: the socio-economic effects. Simply stated, based on observation, regulatory failure in the case of events beyond the design basis translate into high risk associated to investment perception. This is another reality nuclear has to face: the need of investment and additional support mechanisms if the industry want to play an active role in the future. The two aspects are interconnected and in order to lower the investment risk perception on new build we have to work together for a robust, solid technology, proactively oriented towards eliminating regulatory and legal failures.

In terms of energy needs vs energy solutions, this a time for nuclear to grow. Growth requires capital infusion, capital infusion requires credibility and reliability. The list of objectives to be met refer to: constant and effective exchange of safety-relevant information among nuclear operating states, development of common approaches and common understandings on nuclear safety, anticipation of potential challenging safety emerging issues, firmly and completely addressing of new build, increase the efficiency of the regulatory process by providing solid domestic legal basis, review regulations and standards where necessary, develop new ones to fill in gaps, review licensing, upgrade enforcement.

Perception is reality, therefore the industry has both the role and responsibility to act in due time upon new safety issues, to develop a solid preparedness in terms of risk approach and accident management and also to make all these available to the public, regardless of its interdependency degree: general population, stakeholders, authorities, investors, etc.