Joint Regional Approach

Way Forward for Small Countries
Towards Nuclear Power Programmes

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Montenegro is a small developing country, emerging from ex-Yugoslavia, independent and IAEA member state since 2006.

- 14,000 km² area - 625,000 population
- GDP 4.4 billion USD in 2013 - 7,000 USD/capita/y

By the first article of its constitution, Montenegro is declared as “ecological state” - meaning that all major decisions and steps to be undertaken in the country should be regarded from environmental sustainability standpoint firstly.

Apart from a few declining metal industries, tourism and agriculture represent the country’s major revenue.
Electricity production 2.8 million MWh
- HPP 60% (“Perucica” and “Piva”)
- Coal TE 40% (“Pljevlja”)

Electricity consumption 4.6 million MWh
- 55% metal industry
- 45% other

Electricity deficit: 1.8 million MWh (40%)
- this fact weighs heavily on all aspects of economy, politics and life

No new electricity generation installations have been built in Montenegro since 1975, neither is currently under construction
Electric power system of Montenegro
Given the size of the country, its level of development and infrastructure, economic and HR parameters, is not realistic to expect in the foreseeable future the introduction of nuclear energy for electricity production, with NPP construction in Montenegro itself.

However, with several neighboring/regional countries opting (or seriously considering) for including nuclear electricity production in their future energy mix, it is realistic to assume that:

**Montenegro could express its interest in a possible future (sub)regional initiative for a joint nuclear power programme.**
“Regional approaches, involving more than one government or utility, may also be used for financing nuclear power plants”

(“FINANCING OF NEW NPPs”, IAEA, STI/PUB/1345, Vienna, 2008)

We believe Montenegro would be eligible for such programme with

- cca 0.5 - 1 bn EUR investment contribution
- cca 10-20% of a 1000 MWe NPP unit cost
Only a minority of countries in the world (cca 30 of them) do master nuclear power technology, or are potentially capable (cca another 30) of doing that.

The vast majority of countries (IAEA Member States) – more than 100 – neither master nuclear power technology, nor have potential (economic, technological, infrastructural, HR) of doing it on their own.

Are these countries destined to be deprived of any possibility to benefitting from nuclear power?

**JOINT REGIONAL APPROACH** is a way forward for possibly the only realistic way forward.

*them towards nuclear power programmes –*
There are apparent advantages/benefits for the countries involved

- providing reliable long term source of electricity
- sharing the financial burden of energy source investment
- contribution to regional stability
- countries on whose territory NPPs are not situated, are relaxed from many issues related to NPP construction, exploitation, waste, decommission, etc; of course the country on whose territory the plant is situated is compensated for that
- joint approach can have many variations/modalities in financial, technological, societal, R&D, HR, environmental protection, etc. terms
Of course, there are many **obstacles** as well

- New nuclear builds are huge and extremely complex tasks, particularly if the first ones in the country
- With more players involved, complexity multiplicative
- With complexity multiplicative, the potential for problems multiplicative as well
- Problems in one country during (long) realization of the programme reflect all involved
- Political stability in all countries involved is paramount
- Also economic/financial stability in all countries is essential
- Multiplicated risks must be clearly specified, as well as the ways how they will be shared – this is a daunting legal issue
In 2009 Government of Montenegro ordered from the Montenegrin Academy of Sciences and Arts (CANU) an extensive (1M Euro) study on the future ways of country development - “Montenegro in 21st century”. Most prominent domestic exerts and many foreign ones contributed to the project.

A ten page chapter in this study is devoted to perspectives of nuclear power for electricity generation and its reflection to Montenegro.

Study recognizes the fact that neighboring countries are gradually opting for including nuclear power in energy mix.
Study suggests *Montenegro should consider joining a possible (sub)regional nuclear power programme initiative in mid-term future* (factors: economic, political, public acceptance…)

Montenegrin Academy of Sciences and University of Montenegro support strongly the idea of participating in a joint NPP programme in mid-term future.

Tiny pro-nuclear potential in small countries should better join on (sub)regional level than dissipate locally!

The case is much stronger than the support to it!
Regional Conference
Nuclear Energy – Global Trends and Perspectives in South-East Europe
Podgorica, Montenegro, 10-12 May 2011

South-East European Co-operation Process
Regional Conference on Nuclear Energy - Global Trends and Perspectives in South-East Europe (Podgorica, Montenegro, 10-12 May 2011) was subsequently organized in order to
- rise local/regional awareness of the benefits and advantages of nuclear power and
- enable discussing the joint-effort approach to new nuclear builds in the region.

The event was held in co-operation with the IAEA and Montenegrin Academy of Sciences and Arts.

We reported on the Conference findings at several Agency meetings on new NP programmes that followed.
Regional Conference on Nuclear Energy – Global Trends and Perspectives in South-East Europe

Podgorica, Montenegro, 10-12 May 2011
Thank you!

Montenegro
- a great heart of the Mediterranean -