LUNCH MEETING OF DIRECTOR-GENERAL MR VLADIMIR ŠUCHA WITH THE DEPUTY PERMANENT REPRESENTATIVE OF THE REPUBLIC OF LITHUANIA, MR ALBINAS ZANANAVIČIUS
(Brussels, Restaurant "Senzanome", 14 October 2016, 13:00)

Participants:

Ambassador Albinas Zananavičius
JRC: Vladimir Šucha

Article 4(1)(b)

Chef de File: [redacted], **A.3**
Contributions: [redacted], **A.7,**
[redacted], **C.3**
Authorised by: [redacted], **A.3**

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1. STEERING BRIEF

1.1 Scene setter

Following up to the meeting on 23 May 2016, Mr. Zananavičius would like to discuss with you over lunch the following three topics:

1. The construction of the Belarussian Ostrovets Nuclear Power Plant;

2. The progress and outcomes of JRC studies on Baltic States synchronization scenarios; and

Art. 4(3) 3. The JRC work on LNG terminals in the Baltic States.

[redacted]

1.2 Objectives

- To point out the ongoing efforts of the European Commission for engaging with Belarussian authorities concerning nuclear safety standard of the construction of Ostrovets NPP.

- To assure Lithuania of the progress of the JRC study on Baltic States synchronisation and the publication of the results in the near future.
- To underline the contribution of ongoing DG JRC work regarding LNG terminals in the Baltics.

- To highlight the added value of DG JRC's work for national interests of the Member States, also in the light of upcoming MFF negotiations.

1.3 Line to take

- **Ostrovets NPP:** Although the European Commission lacks leverage on Belarus, it consistently attempts to engage Belarus in a voluntary dialogue to ensure high safety standards.

- **Baltic State electricity system integration**: The Baltic Energy Market Interconnection Plan *(*BEMIP*)* study is on track and its outcomes will be based on thorough research and simulations. Its results are to be presented in the coming weeks, as planned (14 November presentation to the working group, mid-December to the high-level group).

- **LNG terminals:** DG JRC is looking at the topic under a number of different angles, which allows for a profound analysis of the available options (first results are expected mid-December).

2. SPEAKING POINTS

2.1 Ostrovets Nuclear Power Plant

- Since 2013, the European Commission has been supporting the Belarusian nuclear regulatory authority through Instrument for Nuclear Safety Cooperation (INSC). The on-going programme includes permanent presence of experts of European Technical Safety Organisations.
- The objective is to strengthen the capabilities of the Belarus nuclear safety regulator in licensing, regulatory supervision and assessment of the Nuclear power plant under construction, commissioning and trial operation concerning complex and specialised regulatory activities related to nuclear safety.
- Since 2015, the programme has been strengthened and there are EC experts at the Ostrovetcs site. In general, the European Commission tries to convince Belarus to perform stress tests. However, this is only possible with a spirit of cooperation and of good will of the Belarussian counterparts.
- Art. 4(3) [redacted]
- The EC (DG ENER) and the Republic of Belarus held bilateral meetings on 19-20 September in Minsk. The discussion on nuclear safety and "Stress tests" exercise for new NPP was conducted.
- Belarus has commenced stress-tests for the Belarusian NPP and plans to complete them by the end of 2016. Belarus declared that the stress-tests will

be performed in accordance with the Joint Declaration on comprehensive risk and safety assessments of nuclear plants endorsed in 2011 by the European Commission and EU neighbouring countries, including Belarus.

- In general, the Belarussian side confirmed their support to the stress test process but more details on their plans regarding full Stress Test process (self-assessment by the operator, preparation of a national report by the regulatory body and peer review by an EU expert) are still pending. Target date to inform the EC for stress tests issue is end of October 2016.

2.2 Baltic State electricity system integration

- **State of play of the BEMIP study**: DG JRC is currently finalising the computations for the techno-economic analysis, following three alternative connection scenarios (sea cables with Nordic countries, land cables with Continental Europe through Poland and "Baltic island scenario" with three Baltic countries as isolated system) with scenarios for 2016, 2020, 2025, 2030).
- The first round of calculations and simulations was finished in the first week of October. This week the models are being updated with the latest information from the electricity operators of the three Baltics Countries plus Poland and Finland, plus the comments of the other BEMIP countries (DE, DK, SE, NO). These new results will be ready by 17th October and the draft report will be updated for the meeting with Navracsics CAB on 20th October, with concrete outcomes of the study.
- [redacted]

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- The final draft will be presented to DG ENER (7th November) and be discussed on 14th November in the BEMIP Working Group, in preparation

of the BEMIP political High Level Group scheduled for the middle of December where results will be approved. Most likely, the Energy Council in early 2017 will include the issue in its agenda.

- It should be noted, that the study focussed on the technical solutions and an assessment of the required investments. Geopolitical and security aspects have not been included but might be considered in 2017. The study considers steady-state situation.
- Once a political decision on the analysed options has been taken, the detailed definition of the techno-economic factors will require further analyses (e.g. a dynamic analysis of the system), for a full picture of the costs and necessary adaptations needed in other EU Member States as well as in Russia and Belarus.

2.3 LNG terminals in the Baltic States

- Currently, the JRC works on two studies in relation to LNG terminals in the Baltic States:
  1. **Regional Risk Assessment**: following the request of the Baltic States + Finland. Completion is scheduled for mid-November 2016.
  2. Study on **Lessons learned from the Gas Projects of Common Interest** (PCI) in the Baltics (including analysis of the LNG terminals). Completion is scheduled for mid-December 2016.
- Once completed, the JRC is available to discuss the outcomes of the study with the Lithuanian government.
- Both studies are the current activities of the JRC research in the field. Future research will look at:
  1. The Impact of North Stream (on flows and markets) expected for first half of 2017
  2. Use of LNG as fuel for maritime transport

3. BACKGROUND INFO

3.1 CV of Albinas Zananavičius

Previous positions:

- Lithuania's Ambassador at the UN
- Lithuanian Ambassador to the World Trade Organisation
- Director of External Economic Relations Department of Lithuania's Ministry of Foreign Affairs

3.2 Ostrovets NPP

Plans for the Ostrovets nuclear power plant project came into fruition by around 2007 and the project foresees the construction of two nuclear reactors that become operational in 2018 and 2020. The NPP would consist of 2 × 1,200 MW Russian reactors (3rd generation technology) and would be located ca. 20 km from the Lithuanian border and 45 km from Vilnius (540,000 inhabitants).

The NPP is located on the river (Neris/Vilija) upstream of Vilnius and will use cooling towers or so called closed-loop cooling system.

The Belorussian NPP project is strategic to Belarus as it can benefit the country to export its electricity surplus to the EU, while it might also contribute to reduce its 100% energy dependence on Russian gas.

Lithuania is very critical about the project, in terms of safety fears over a Russian-type NPP next to the Lithuanian border as well as in terms of sales of cheap Belorussian electricity on the Lithuanian market, while the Lithuanian NPP project in Visaginas is only making slow progress. In the past, Lithuania had to shut down its NPP in Visaginas due to safety concerns and now has to import ~80% of electricity.

The NPP in Belarus may lead to a lower import price, thus increasing the power exchange on the interconnectors from Belarus to the Baltics. However, technically Lithuania could block the Belarusian electricity in the transmission system when the Baltic countries complete their power grids' synchronization with Europe.

Apparently, there were a number of accidents on the construction site, for instance on 10th July when the reactor vessel was dropped during installation, followed by the Belorussian request to replace the reactor vessel on 11th August. [redacted]

Art. 4(3) [redacted]

Please see in Annex a more detailed assessment of the planned NPP.

3.3 Baltic State electricity system integration

Due to historical and geographical reasons, the Baltic States are currently operated – as a synchronous grid – in parallel with the Integrated/Unified Power System (IPS/UPS) of Russia and Belarus. In addition, the electricity generation in Baltic strongly depends on natural gas supply, since nearly half of the generators burn natural gas[1]. Installed generation capacity classified by the primary sources is listed in Table 1.

Table 1 Installed Net generation capacity (MW) in the Baltic countries per production type [source: ENTSO-E Transparency Platform, 2015/16]

Production Type	***Estonia***	***Latvia***	***Lithuania***
Wind Onshore	328	55	282
Hydro Pumped Storage	-	-	900
Other renewable	8	-	33
Fossil Oil shale	1698	-	-
Biomass	80	102	29
Fossil Coal-derived gas	86	-	-
Waste	20	-	31
Fossil Oil	-	-	160
Other	-	-	23
Hydro Run-of-river and poundage	8	1537	128
Solar	-	-	68
Fossil Gas	181	1103	2651
Total	*2409*	*2797*	*4305*

The Baltic power systems still lack adequate electricity connections, both between themselves and to other parts of the EU. However, the situation is improving: recently, the Estlink 1 and 2 connections between Estonia and Finland, the LitPol Link connection between Lithuania and Poland and the Nordbalt connection between Sweden and Lithuania have considerably raised the transfer capacity between the Baltic and the EU electricity markets to approximately 22% (see Figure 1).

[1] 47% of the installed capacity excluding pumped hydro [2014 data]

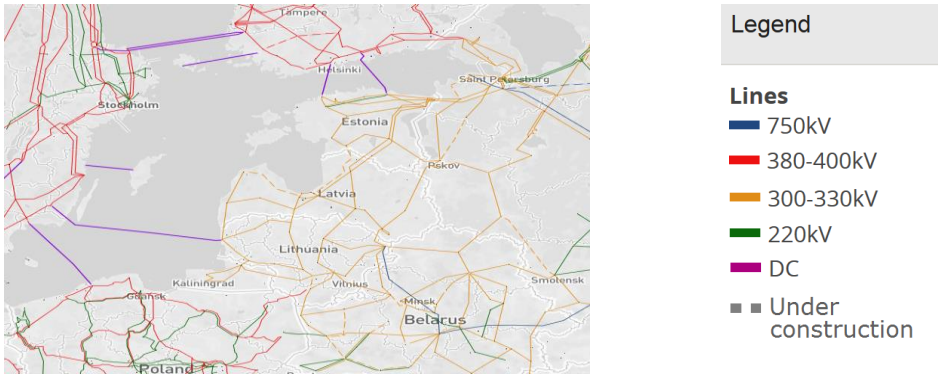

Fig. 1 Electricity transmission grid of the Baltic States [source: ENTSO-E, Jan 2016]

The integration of the Baltic States into the EU energy market has been identified as a strategic priority, as it improves competition and helps bring more affordable energy prices for consumers. The **Baltic Energy Market Interconnection Plan (BEMIP)**, under which the LitPol Link and Nordbalt were planned, aims to further integrate the Baltic States' energy market by building more infrastructure.

BEMIP projects have been part of the European Economic Recovery Plan (EERP) which means that they have been eligible for over half a billion euros in funding. Projects can also be funded through the European Regional Development Fund, the EU's Cohesion Fund, and, as projects of common interest, through the Connecting Europe Facility.

The BEMIP forms part of the overall 'EU Strategy for the Baltic Sea Region' and foresees that:

- the Nordic electricity market model (NORDEL) will be extended to the three Baltic States. The aim is to remove barriers to competition in the countries and bring them into conformity with EU rules;

- new electricity infrastructure projects will be developed in the Nordic countries, Poland, Germany, and the three Baltic states themselves in order to properly integrate the Baltic States into the EU's internal energy market;

- the gas internal market and infrastructure will be improved by establishing new interconnections (e.g. BalticConnector pipeline between Estonia and Finland), implementing reverse flows, LNG facilities in Estonia and Latvia and gas storage facilities in Latvia.

3.4 Current JRC work on energy in the Baltic Region

- The JRC developed and validated **a power system model of the Baltic States** with the purpose of providing comparative options for a reliable and secure development of the Baltic electricity system. The model comprises electricity system power elements of voltages of 110 kV and higher, mainly 110 kV, 220 kV and 330 kV.

- The model is currently used in a joint project (AA) with DG ENER, in the context of BEMIP. Directorate C is advising DG ENER on cost-effective, reliable and secure

development of power (electricity) system in Baltic countries. The aim of the JRC work is to assess the needed investment in the Baltic electricity system (transmission capacity, power reserves, Back-to-Back converters) related to the Baltic de-synchronisation from Russia/Belarus and possible synchronisation with the Continental Europe Network or with the Nordic network.

In this frame, the JRC performs a techno-economic and geo-political security analysis of the electricity system of the Baltic countries in the 2016 reference scenario and in the 2020, 2025 and 2030 future scenarios. For this purpose the JRC uses its existing Baltic transmission grid/market model mentioned above, which is being further refined with data from the Baltic transmission system operators. The model allows performing techno-economic analyses including power flow studies and electricity market studies in order to determine the electricity generation cost vs electricity system development cost under various scenarios, maintaining the reliable operation of the system.

Three scenarios are being considered:

1. The Baltic Region is NOT synchronised with any of the neighbouring countries
2. The Baltics are synchronised with the Nordics through two new AC cables between Estonia and Finland
3. The Baltics are synchronised with the Continental European Network via Poland

- According to a study recently published by the JRC (March 2016[2]) the dependency of the Baltic States on foreign electricity production in 2020 and 2030 will be fairly low, provided that the expansion of generation resources goes ahead as planned in the frame of BEMIP. This means that, even if import is disrupted, Baltic electricity demand may be satisfied without significant loss of security of supply (although likely at a higher price, with the consequent adverse welfare and competitiveness effects). The cross-border transmission corridors inside the Baltic States are sufficient to sustain the electricity consumption patterns assumed in the scenarios considered; however, the internal network projects should be fostered to remove congestion, especially in the northern part of Estonia and the area South-West of Riga.

3.5 Lithuania's position on the current study (following Lithuanian presentation at BEMIP in Vilnius on 20th September 2016)

- The synchronisation of the energy sector of the Baltic States is a key strategic aim for Lithuania.
- Political decisions for the necessity to pursue the goal of Baltic States de-synchronization from the IPS/UPS electricity system and synchronization with European Networks are evident for Lithuania and are not questioned.
- The geo-political challenges of the Baltic States' de-synchronisation would be the same regardless of the chosen option on the synchronisation with European Networks.
- As a result, Lithuania argues for addressing the geo-political and security of supply aspects separately and at a later stage, after choosing the synchronisation option.

[2] **"**The Baltic Power System between East and West Interconnections", JRC Science for Policy Report 2016.

- Security of Supply arguments in the DG JRC study should focus for example on physical/technical aspects, such as maintenance, fault risks, fault localisation and repair durations, protection of critical energy infrastructure issues as well as the possibility of third countries impact (non-EEA countries) on the infrastructure.

4. ANNEXES

4.1 Overview of Belorussian Nuclear Power Plant (attached)

4.2 Integration of the Baltics States into the EU-Electricity System: A Cost-Benefit and Geo-Political Energy Security Analysis (Intermediate Report: Modelling Approach) – *Draft 12.08.2016 (attached)*