



Republic of Moldova: Storage and Fuel Switching Issues

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1

The overall energy dependence of the Republic of Moldova - 74% (2016):

- natural gas - 100%
- electricity – 75-80%
- oil products – 100%.

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The country is exposed to gas supply shock risk (2006 and 2009)

No gas storage facilities in the Republic of Moldova and no access to LNG:

- two sites for possible geologic storage facilities (Zagarancea-Mânzesti-Unghenii de Jos villages and in the Cantemir district);
- no progress on this investment project because of the lack of financial resources (at least EUR 750 mil)

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Action Plans for emergencies on the natural gas and electricity markets, adopted by the Moldovan Government

Short term response in case of shortages in the gas supply:

- Switch of all local generation units to a less resource consumption mode and other alternative fuels;
- Import of gas from the EU:
 - a) using reverse flows from Poland, Hungary and Slovakia through the Ukrainian gas transmission system;
 - b) from Romania through the Iasi-Ungheni interconnector.
- Increase the electricity import from Ukraine and purchase it from MGRES/Transnistria or/and import it with the limited technical possibilities from Romania (Island mode);
- Implement Demand Restraint measures;
- Use RES and other alternative fuels for electricity, space heating and cooking (biomass, wood, coal etc.), etc.

Medium and long term response:

- ✓ Diversification of gas imports
 - Strengthening gas transmission network with EU through the construction of Ungheni – Chisinau gas pipelines/ extension of the Iasi-Ungheni interconnector
 - Import of gas through Trans-Balkan route, along with supplies from Romania, after the exploitation of natural gas in Black Sea offshore will commence;
- ✓ Prospection and exploration of hydrocarbons
 - Winner of the Concession auction of Hydrocarbon Geological Exploration Works 2016 - Frontera Resources International LLC.
- ✓ Governance of emergency oil stocks (next slides)
- ✓ Maximising energy efficiency gains potential
- ✓ Larger scale deployment of clean energy technologies
- ✓ Cooperation with neighbouring countries

According to the Standards for the Technological Design of Power Plants (4.2.1, 4.2.25, VNTP-81), when the cogeneration plant operates on gas, the amount of available heavy fuel oil (HFO) must be:

✓ **Stock reserve:**

10-day stock based on the 20-hour operation of all electrical boilers at their rated load;

✓ **Emergency stock:**

5-day supply, based on a 20-hour operation of all rated power boilers.

Significant part of storage capacity requires maintenance and rehabilitation to be considered as operational

Directive 2009/119/EC of the European Parliament and Council from 14 September 2009 on imposing an obligation on Member States to maintain minimum stocks of crude oil and/or petroleum products

RM: Draft Law on creating and maintaining the minimum level of oil products stocks – planned to be adopted by the Parliament by the end of 2018 – beginning of 2019.

The main provisions of the Law on oil stocks:

- the obligation of creating minimum oil of stocks should be achieved fully by economic operators by creating and maintaining emergency stocks exclusive;
- the Government right to create and maintain, if necessary, certain specific stocks of petroleum products.

This Law shall be implemented from January 1, 2020:

- until **31 December 2020** – at the level of the average daily net imports for **30 days** or at the average daily domestic consumption for 20 days;
- until **31 December 2021** - at the level of the average daily net imports for the **60 days** or at the average daily domestic consumption for 40 days;
- until **31 December 2022** - at the level of the average daily net imports for the **90 days** or at the average daily domestic consumption for 61 days;

Governance of emergency oil stocks (2)

Operators are required to establish and maintain emergency stocks of the following petroleum products,:

- a. petrol;
- b. gas oil / diesel (distillate fuel oil);
- c. kerosene type jet fuel;

The main costs (2015) are:

- capital costs (investment sources/ storage capacity) - **12.4 million Euro**
- initial costs for the purchase of petroleum products - **265 million US dollars**
- average annual costs of maintaining and managing emergency stocks - **10 million Euro.**

Per total, the influence of all costs related to creating and maintaining minimum stocks requirement of petroleum products on retail prices of petroleum products was estimated in 2015 at 26.8 Euro/ton or 0.023 Euro /liter, that means an increase in prices by 2.5 -3%.

