

Implementation of Energy Strategy of Republic of Moldova till the year 2020

Chisinau,
2009



Energy sector of Republic of Moldova - characteristics

- Lack of local energetic resources (natural gas, oil, coal);
- Reduced energy efficiency;
- Low level of utilization of renewable energy sources;
- Deterioration of energy equipments at 60-70% at electric power plants, high-voltage lines and distribution networks;
- Insufficient volume of investments in Energy sector;

Energy sector of Republic of Moldova - challenges

- Total dependence on imported primary energy resources;
- Limited number of imported sources of fuel and electric power;
- Import of natural gas only from one supplier;
- Reduced capacity of electric lines of connection with South-East Europe and West;
- Necessity in modernization of electric transport network.

Energy Strategy of the Republic of Moldova

Energy Strategy of the Republic of Moldova till the year 2020 was approved through the Government Decision nr. 958 from 21.08.2007.

The main objective of this document is to create a more efficient Energy branch, to assure energetic security of the country, modernization of energetic infrastructure and integration on the European energy market.

Strategic objectives

The objectives of energy security, namely:

- ***strengthening of energetic inter-connections with Ukraine and Romania;***
- ***joining of the national electro-energetic system and system of natural gas to the Treaty of Energetic Community;***
- ***the improvement of investment climate regarding the generation of electric power;***
- ***the diversification of types of fuel used on the territory of the Republic of Moldova;***
- ***strengthening the role of the Republic of Moldova as an important transit country for natural gas and electric power;***

Strategic objectives

The objectives oriented towards economic and energy efficiency:

- The increase of energy efficiency at the production, transportation, distribution and delivery of energy and fuels;
- The reduction of costs and formation of such prices for the energy and fuels which will cover the costs;
- The implementation of efficient energy technologies with the reduced impact on the environment;
- The attraction of private investments in the rehabilitation and building of energetic objects;

Investments attraction

- Promotion of legal reforms which will facilitate the financing of the projects and assure attractive investment climate;
- Creation and strengthening of mechanisms for attraction and efficient use of financial means for the financing of energetic projects;
- Use of the methodologies, approved at the international level, for the evaluation of investments necessary to achieve the strategic objectives and specific objectives of each segment of Energy branch from the Republic of Moldova and for the prioritization of development programs;
- Rational use of state and private investments in development projects of Energy Sector.

Electrical power sector



Energy system of the Republic of Moldova

Energy sources:

7 stations: 5 – thermal, 2 – hydro;

Total installed power – 3008 MW, inclusive:

<i>Right part of Dniestr river –</i>	<i>440 MW</i>
- <i>CHP-1, Chisinau</i>	<i>66 MW</i>
- <i>CHP -2, Chisinau</i>	<i>240 MW</i>
- <i>CHP - North, Balti</i>	<i>24 MW</i>
- <i>Hydroelectric power station Costesti</i>	<i>16 MW</i>
- <i>CHP of sugar plants</i>	<i>98 MW</i>
<i>Left part of Dniestr river –</i>	<i>2568 MW</i>
- <i>Republican electric power station (REPS), MOLDOVA</i>	<i>2520 MW</i>
- <i>Hydroelectric power station, Dubasari</i>	<i>48 MW</i>

Energetic system of the Republic of Moldova

Transport and interconnection system with neighboring countries:

Air electric lines (AEL) – 400 kV, 300 kV, 110 kV with length of ~ 6000 km;
Electric stations – 172 units, installed power - 6700 MVA.

INTERCONNEXION:

With Ukraine:

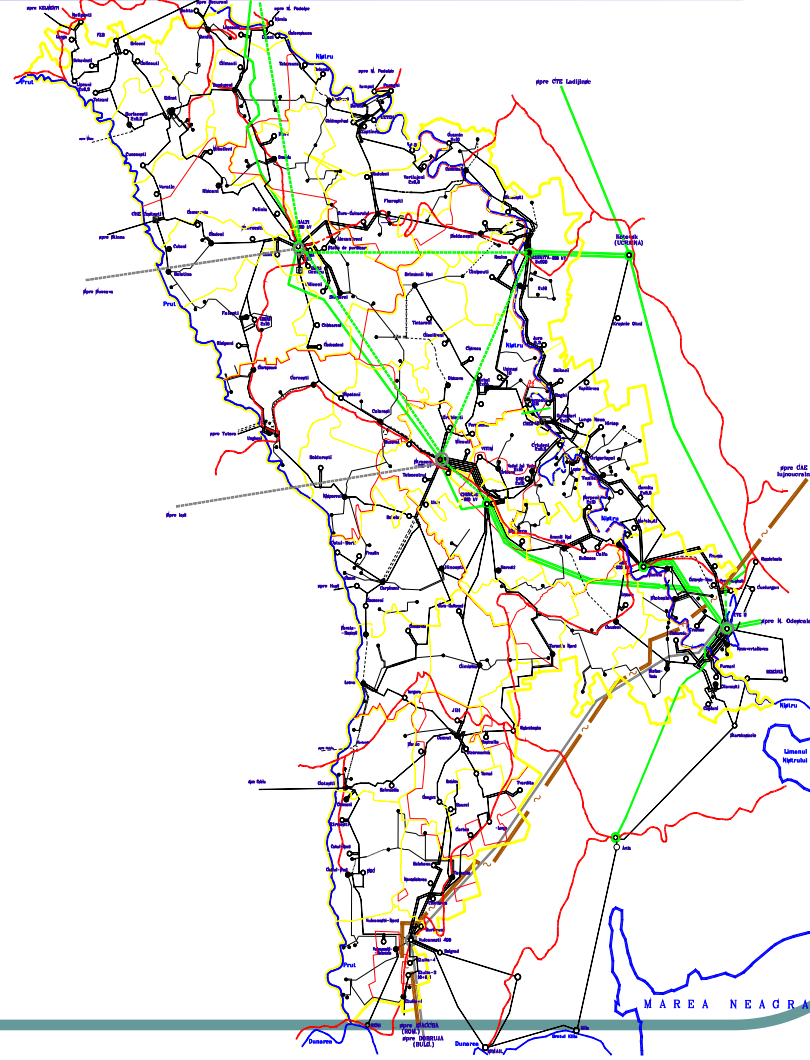
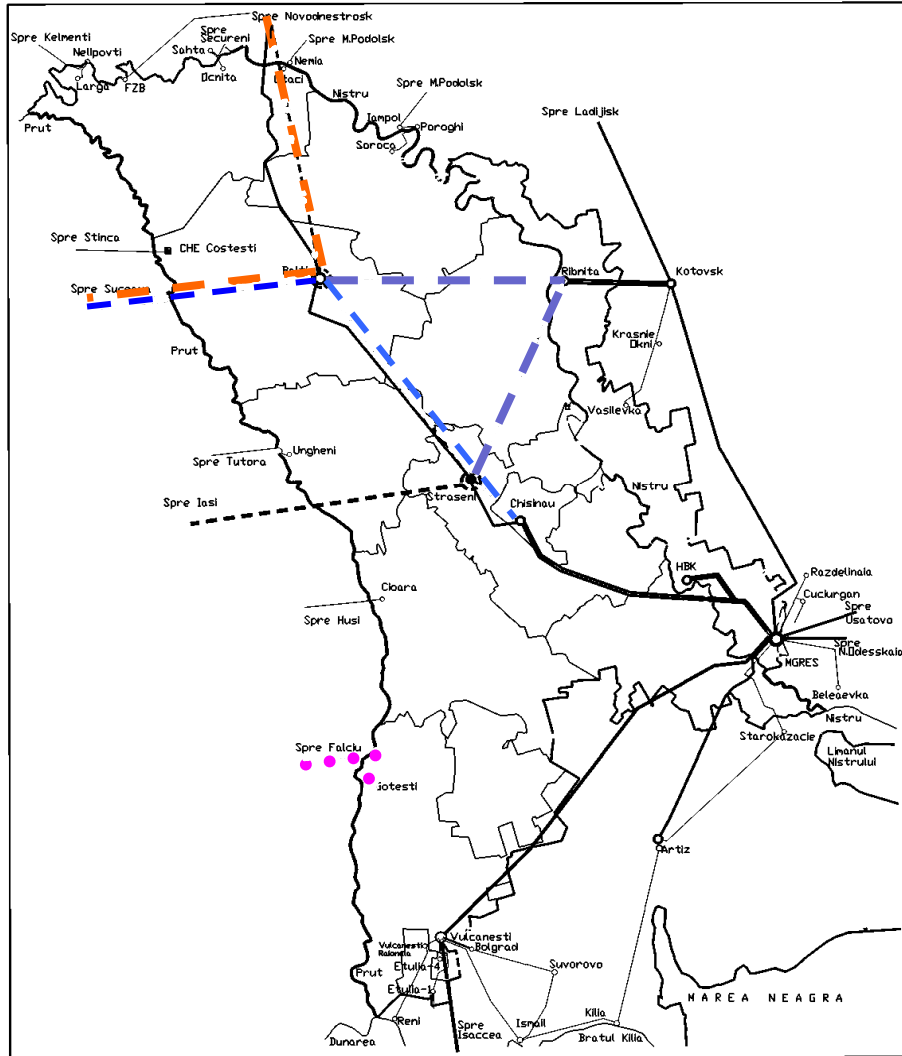
AEL-330 kV Bălți-Novodnestrovsk,
AEL-330 kV REPS Moldova-Kotovsk,
AEL-330 kV REPS Moldova-Usatovo,
AEL-330 kV REPS Moldova - Nov.Odesa,
AEL - 330 KV REPS Moldova-Artiz,
AEL - 330 kV Ribnița-Kotovsk – 2 lines;
and 14 AEL 110 kV.

With Romania :

AEL 400 kV; Moldavian Heat and Power Station - Vulcanesti - Isaccea;
3 - AEL 111 kV: Cioara - Husi, Costesti - Stinca, Ungeni – Țutura

Map of energetic system of the Republic of Moldova

Sistemul Energetic al Republicii Moldova



Objectives

AEL - 330 kV

***Balti (Republic of Moldova) - Novodnistrovsk
(Ukraine)***

***Total length - 123 km,
inclusive on the territory of the Republic of
Moldova - 87 km,***

***Cost of works – 36,2 mil. \$ USD
(according to the feasibility study).***

Objectives

AEL- 400 kV

Balti (R. Moldova) - Suceava (Romania),

Total length - 115 km,

***Inclusive on the territory of the Republic of Moldova -
55 km.***

Cost of works - 15,2 mil. €

***If the capacity of AEL- 400 kV Balti (R. Moldova) –
Suceava (Romania) will be 400 MW, then:***

***Transit of electric power - app. 3,5-4,0 billion kWh
annually;***

Economic effect - app. 12,0 mil. \$ USD.

Objectives

***AEL- 110 kV Falciu (Romania)- Gotesti
(Republic of Moldova)***

Length-28 km;

Cost of works -3,2 mil. \$ USD;

Capacity – 60 MW;

Transit of electric power – 526,6 mil. kWh;

Economic effect - 1,6 mil. \$ USD

Objectives

Consolidation of internal networks of transportation of electric power:

- *AEL 330 kV Straseni-Chisinau-2*

Length – 42 km, the cost - 11,2 mil euro

- *AEL 330 kV Balti-Straseni-2*

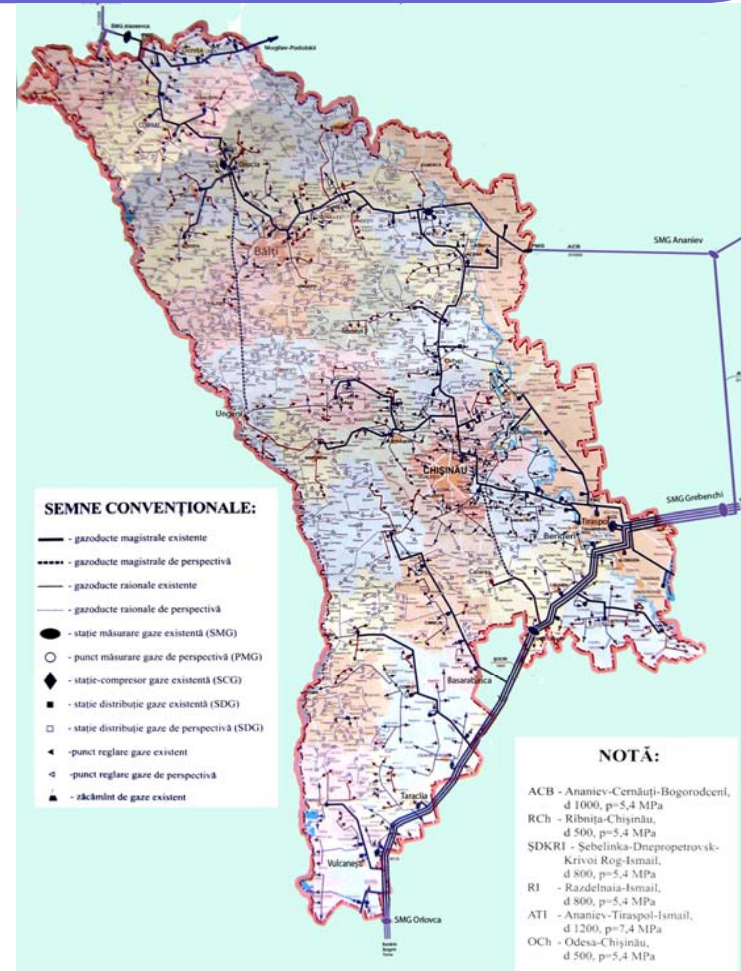
Length -103 km, the cost -13,6 mil euro

Realized:

- ✓ **Construction of interconnection line AEL 110 kV Falciu (Romania) - Gotesti (R. Moldova).**
Total length – 25.07 km on the territory of R. Moldova.
Actually, 9,2 km were built .
Were assimilated~ 0. 65 mil. \$ USD, offered by state enterprise “Moldelectrica”.
- ✓ **At the first stage the Memorandum for the construction of AEL-400 kV Balti (R. Moldova) – Suceava (Romania) was signed between state enterprise “Moldelectrica” and enterprise “Transelectrica”.**
- ✓ **At the second stage it is planned to sign the Memorandum of Understanding concerning the cooperation between TERNA (Italy), Transelectrica (Romania) and Moldelectrica (Moldova) about the construction of above-mentioned AEL**
- ✓ **The project for the reconstruction of electric transforming station 330 kV from Balti was developed.**

Natural gas sector

- Map of natural gas network from the Republic of Moldova



Objectives

- Updating and monitoring of National Program of gasification;
- Construction of gas pipeline: Balti-Ungheni, 114 km;
- Audit of technical situation of arterial gas pipeline;

Realized

The development of gas sector is established in the National Program of gasification of the Republic of Moldova

Actually, app. 915 from 1531 villages were gasified, that is 60%.

Realized

In the strategic plan the measures regarding the construction of new arterial gas pipelines were realized in order to assure a secure alimentation with natural gas.

On **July 27 th 2007** the construction of gas pipeline **Tocuz-Cainari-Mereni (64 km)** was finished.

Transportation capacity - **1,8 billion m3 of natural gas annually.**

It assures the energetic security of the country on the direction North-South and delivers natural gas towards Chisinau from the second direction, with the integral use of generation capacities located in the capital.

Realized

In the strategic plan the measures concerning the acceleration of the process of internal gasification of villages are taken

At June 16, 2008 the *Government Decision nr.715* was approved concerning the acceleration measures of the process of internal gasification which provides beneficiaries' access to the street gas pipelines.

Actually, the above-mentioned Government Decision is applied in more than 70 of villages from the republic.

Realized

Inventory of gas pipelines public property

At May 13, 2008 the Government Decision nr.597 was approved *concerning the inventory and re-evaluation of gas pipelines public property.*

Main objective – review of information concerning the gas networks, public property, managed together with the local public authorities.

The length of gas pipelines built with the public money constitutes 5,5 thou km.

Realized

Concerning the perspective projects we mention the gas pipeline **Balti-Ungheni, which**

Provides integral gasification of districts **from the North-West of the country: Singerei, Falesti, Telenesti, Ungheni.**

The completion of works is provided for the last quarter 2009 – L=52km.

The construction of the above-mentioned gas pipeline will permit circular connection of networks for supplying with natural gas the Center and West of the country.

Realized

Concerning the other projects, we mention the gas pipeline of high pressure towards the International Port “Giurgiulesti”

Provides the supply of the natural gas of plants and residents from the International Port “Giurgiulesti”.

length 12 km, diameter 110 mm,

Also, the realization of this gas pipeline will permit circular connection of networks from Giurgiulesti.

Termoenergetic sector



Basic documents

- Conception regarding the renovation of the republican system of alimentation with heating
- National Program of renovation and decentralization of the systems of alimentation with heating of villages from the Republic of Moldova

Objectives

- technical development of heating supply systems towards minimization of imported fuel consumption and environmental impact, through:
 - the use of natural gas to maximum efficiency by implementation of cogeneration both within centralized systems and within local and individual ones and at a later stage through trigeneration;
 - maximum use of agricultural, industrial and garbage waste and renewable energy sources in the fuel balance of the heating sector;
- rationalization of centralized systems by multiplying heating sources distributed spatially;
- promoting the improvement of thermal energy efficiency at the consumers' end, by a combination of mandatory measures and financial incentives.

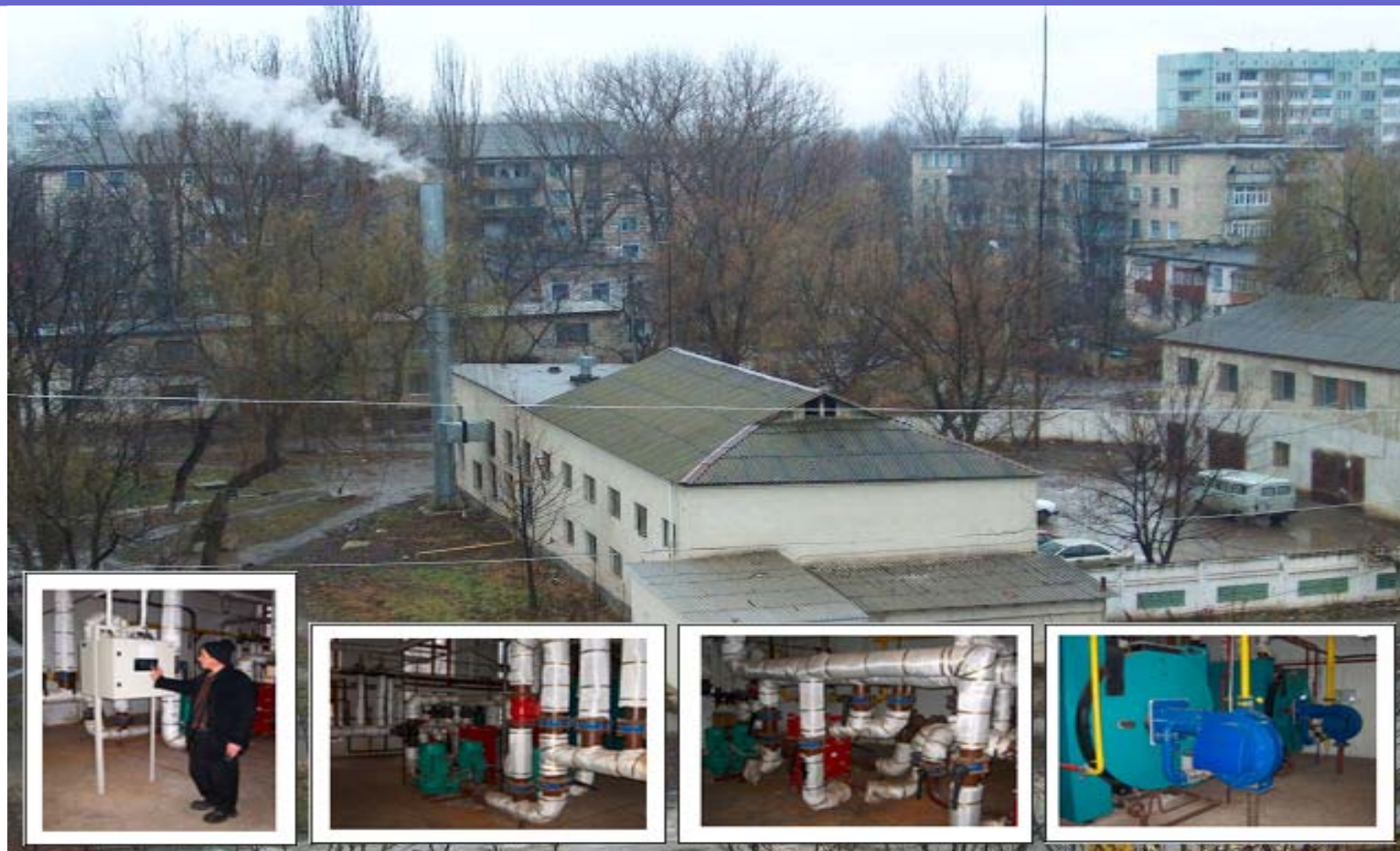
Installed capacities of heat and power plants

	CHP-1	CHP-2	CHP-North
Installed electric capacity (MW)	66	240	28,5
Availability (hours/annually)	8542	8011	3990
Realized electric power (GWh)	151,9	805,4	67,7
Fuels used	Gas, black oil	Gas, black oil	Gas, black oil
<i>Quantity of used fuels:</i>			
- gas (th m³)	81,1	308,5	38,0
- black oil (tons)	0	0	0
Year of construction	1951	1976	1956

Action Plan for the implementation of Energy Strategy. Generation of electric power

- JSC „CHP-1”:
modernisation and enlargement to 90 MW
- JSC „CHP-2”:
modernization and enlargement to 440 MW
- JSC „CHP- North”:
modernization and enlargement to 100 MW

National Program for renovation and decentralization of systems of alimentation with heating of villages from the Republic of Moldova



During the years 2003-2008, 963 new sources of thermal energy were built in Moldovan villages.

Modernization of Electro Energetic System

Main benefits:

- ❑ Efficient delivery of electric power;
- ❑ Reduction of technical and commercial losses;
- ❑ Improvement and modernization of dispatching office and telecommunications;
- ❑ Improvement of security and efficiency of electric power delivery.

Thermal and energy component

Main benefits:

- ❑ Increase of availability and quality of heating and delivery of hot water in social public institutions and other residential buildings;
- ❑ Efficiency increase of production processes, distribution and consumption of thermal energy.

Thank you for your attention!

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