

ROSTREC

PROJECT
2009 - 2010

Energy Security and Critical Infrastructure Protection Strategy for Romania and the Regional Perspective



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SUMMARY

- ✖ **Why ROSTREC?**
- ✖ **Romania at a glance – energy sector profile**
- ✖ **Energy security: A key element of Romanian National Security**
- ✖ **Critical Infrastructure Protection**
- ✖ **From “War games” in military to “Serious gaming” in energy**
- ✖ **Conclusions and recommendations**

WHY ROSTREC?

- ✖ The ROSTREC project aimed to trigger a broader debate on energy security in Romania by offering some views from the perspective of non-governmental organisations in the context of the preparation of a renewed and more comprehensive version of the national Energy Security Strategy.
- ✖ It was mainly focused on energy while securing adequate protection of critical infrastructures.
- ✖ The document reviews, updates and completes the existing strategies in the field taking into account Romania's new status as an EU and NATO member state, the relevant international experience (especially Norwegian), and recent developments in the areas of energy security and critical infrastructures protection.

KEY FINDINGS

- ✖ **“Serious Gaming: ROSTREC Online solution”** - a new tool for policy formulation and decision-making support to be used by the main stakeholders in the national and international energy community
- ✖ **The main role of critical infrastructures in energy security**
- ✖ The development of **public-private partnerships** - one of the promising solutions
- ✖ The awareness about the link between energy and climate change is not yet sufficiently well developed in Romania
- ✖ Moving from a political paradigm to a strategic paradigm – a necessary long-term vision

KEY FINDINGS 2

- ✗ Promoting new approaches and tendencies: **“thinking the unthinkable”, “from known unknowns to unknown unknowns” or “making the unconventional conventional”**
- ✗ **The Norwegian model** is important since it identifies the “secret mechanisms” of success in dealing with energy resources and securing a key role in Europe based on strategic vision
- ✗ Three and a half years after the accession to the European Union, Romania still lacks proper **post-accession strategies**, and is not yet fully aware of the challenges regarding its 2020 targets
- ✗ Romania has a chance to position itself as an **energy player** (as a producer, transit country, holder of storage and processing capacities, consumer, and exporter) and also as **a provider of energy services** inside and beyond its borders
- ✗ **ROSTREC Project - virtual library on energy security and critical infrastructure protection**

CRISIS IN 4 DIMENSIONS

- ✖ The challenge of the financial crisis: From reduction of overall spendings to the creation of new economic growth by **massive state intervention and investment in new energy.**
- ✖ European natural gas: **Strong dependence of EU on Russia- from confrontation to cooperation.**
- ✖ **Oil supply:** Peak in conventional oil, OPEC control of major reserves, need of a long term vision.
- ✖ Climate and carbon: Perceived need for drastic reduction of **CO2 emissions.** EU 20-20-20.

ROMANIA AT A GLANCE

- ✖ Electric power generation - **64.77 TWh in 2008.**
- ✖ exports of **4.43 TWh**
- ✖ electricity generation:
 - + **54.3%** - thermal power plants (66% coal fired, 30% burning natural gas, and 4% using heavy oil)
 - + **28.4%** by hydropower stations
 - + **17.3%** by nuclear facilities

ROMANIA AT A GLANCE 2

- ✖ **Energy import dependency is lower in Romania than the average for the EU-27.**
- ✖ **40%** of imported energy resources is represented by crude oil coming mainly from the Russian Federation and Kazakhstan.
- ✖ Romania also imports certain amounts of natural gas and solid fuels to meet domestic demand.
- ✖ Net imports have decreased by **41% since 1990.**

ENERGY SECURITY:

A Key Element Of Romanian National DEFENCE STRATEGY

- ✖ **2010 National DEFENCE Strategy – an important framework for energy security**
 - + **The role of strategic community**
- ✖ **Major objectives:**
 - + **Securing the access, the transit and the promotion of the EU energy strategy,**
 - + **The Wider Black Sea Area**
 - + **Energy critical infrastructure protection**
 - + **Regional conflicts- an important risk factor for EU and non-EU energy markets**
 - + **Improving the national legal framework.**

ENERGY SECURITY:

A Key Element Of Romanian National Security

- ✖ Romania's commitments within NATO and EU concerning energy security.

Specific agenda related with Romania's status as a border country of NATO and EU:

- ✖ Key strategy- a vision for the Wider Black Sea Area.
- ✖ Relations with Russia, Ukraine
- ✖ Promoting EU's instruments towards non-EU members: ENP, Black Sea Synergy, Eastern Partnership.
- ✖ Maritime security and surveillance
- ✖ Securing pipelines, ports facilities and terminals

ENERGY SECURITY AND CRITICAL INFRASTRUCTURE PROTECTION

- ✖ After the terrorist attacks of **11 September 2001** on the World Trade Centre and the Pentagon, it is considered that infrastructures can become critical due to terrorist attacks or other threats, especially asymmetrical ones.
- ✖ In this context, we consider that critical infrastructures, their protection and resilience could contribute to security and stability not only of a country but also a region.

ENERGY SECURITY AND CRITICAL INFRASTRUCTURE PROTECTION

- ✖ **European Council Directive 2008/114/EC** “the critical infrastructure- *an asset, system or part thereof located in Member States which is essential for the maintenance of vital societal functions, health, safety, security, economic or social well-being of people, and the disruption or destruction of which would have a significant impact in a Member State as a result of the failure to maintain those functions*”.

ENERGY SECURITY AND CRITICAL INFRASTRUCTURE PROTECTION

- ✖ The European Programme for Critical Infrastructure Protection focuses attention on 33 vital sectors and services connected to them.
- ✖ **Sector - Energy**
- ✖ **Service or Product**
- ✖ 1. Production of oil and gas, refinery, treatment and storage, including pipelines;
- ✖ 2. Production of electric energy;
- ✖ 3. Energy, gas and oil transport;
- ✖ 4. Energy, gas and oil distribution.

ENERGY SECURITY AND CRITICAL INFRASTRUCTURE PROTECTION

The European Commission suggests three essential criteria for the identification of potentially critical infrastructures: **extent or surface, the degree of seriousness, effect in time.**

- ✖ Romania's strategic options –there is a need for a rapid development of effective, **specialized infrastructure networks** that should be compatible with the European and Euro-Atlantic ones and capable to sustain the development and accelerated modernization of the economy and the strengthening of national security.
- ✖ For this purpose **comprehensive programmes of national investments** will have to be launched in cooperation and partnership with other member states of the European Union and NATO supported by proactive energy diplomacy.
- ✖ There is a need for development of **a standardized methodology regarding the identification and classification of threats**, provision of adequate communication, co-ordination, effective cooperation and coherent implementation of the established protection measures, and setting clear responsibilities for all subordinated structures with competences in this field, while paying special attention to terrorist threats.
- ✖ Further steps must be taken to reinforce Romania's position as a reliable **transit country that has important possibilities and responsibilities for the security of the current and future energy routes to Central and Western Europe.**

From “War Games” in military to “Serious gaming” in energy

- ✖ “Serious Gaming”. It is high time to move from the classical maps, statistics analysis, reports a.o. in energy to a new tool for enhanced simulation and decision making for energy.
- ✖ The EURISC Foundation on ROSTREC on line scenario gaming solutions.
- ✖ “Serious gaming” for energy is now helping overcome challenges in studying poorly understood dynamic processes, as well as the poorly understood stakeholder institutional interactions by opening to the participations to many different perspectives and special competencies.

FROM “WAR GAMES” IN MILITARY TO “SERIOUS GAMING” IN ENERGY

- ✖ In the framework of this project, a ROSTREC scenario gaming solution was developed for actual energy security, by Prof Dr. Adrian Gheorghe and was launched on 26 May 2010 in Brussels.
- ✖ “Is Europe’s Energy Security Policy a Reality or a Ambition?” Policymaker’s dinner Bibliotheque Solvay, By Security Defense Agenda, Friends of Europe and EURISC Foundation, 26 May, 2010

CONCLUSIONS AND RECOMMENDATIONS FOR GOOD ENERGY GOVERNANCE

I. Deregulation challenges

- ✗ **Review of the existing national development and energy strategies**, promotion of dialogue among key stakeholders as well as the public debate concerning a common strategy to cope with the negative effects of the transition phase.
- ✗ **Reducing the impact of the financial and economic crisis** by meaningful steps to manage the transition to a liberalized energy sector and energy market. (political will and vision)
- ✗ **Romania should develop a long-term and coherent vision for the introduction of 'clean' coal technologies in line with the EU recommendations and agreed standards.**
- ✗ Considering the recently enacted reductions of subsidies and entitlements for consumers, **alternative solutions have to be devised to provide adequate protection to the most vulnerable social groups**

RECOMMENDATIONS 2

II. Regulation mechanisms and energy security priorities

- ✖ Although the basic legislative frameworks was repeatedly modified in the past few years, it has to be further improved in order to cope with the new EU regulations and the new challenges.
- ✖ **The role and operational autonomy of the National Energy Regulatory Authority (ANRE) should be enhanced** both in the domestic energy market and as an interface with the EU regulatory framework.
- ✖ **ANRE should enhance the issues of forward planning in the energy sector, competition, integration of the national energy market with the regional, European and international markets, and improving the quality of energy services.**
- ✖ A coherent and comprehensive strategy should be **prepared to involve private actors in the energy sector in compliance with the EU competition directives.**
- ✖ The primary (legislative) and secondary (regulatory) legal framework should be further improves with respect to **the alternative and renewable energy sources in accordance with the EU recommendations (solar, wind, biofuel, biomass, etc)**

RECOMMENDATIONS 3

- ✖ **The existing policies concerning the Romanian strategic objectives in relation to the non-EU energy actors should be reviewed with a focus on long-term national interests in the field of energy.**
- ✖ **Better use of the existing cooperative instruments outside the EU energy market, Black Sea Synergy, Black Sea Economic Cooperation Organisation, Shanghai Cooperation Organisation (SCO), other regional, bilateral and trilateral arrangements or partnerships.**
- ✖ Flexible regulatory mechanism for the trade and transit of energy, exchange of relevant information, promotion of public/private partnerships, and involvement of local communities and civil society in sharing the responsibilities and benefits of a cooperative approach.
- ✖ 12 November 2008- In compliance with the requirements of EU membership, the National Sustainable Development Strategy of Romania 2013-2020-2030 was prepared and endorsed by the Government.
- ✖ ***The National Strategy on Environment Protection*** (the chapter on climate change has to be revised in order to integrate the new EU new targets and policies).
- ✖ ***Strategy and Plan of Action on Atmosphere Protection*** (contains outdated information and has to include the new data from the European Environment Agency).

RECOMMENDATIONS 4

- ✖ **Romania has to take appropriate measures to mitigate the risk of becoming the subject of EU infringement procedures.** The Ministry of Environment has the responsibility to check carefully Romania's compliance with all relevant EU legislative and regulatory dispositions.
- ✖ ***Strategy and Plan of Action on Atmosphere Protection*** (it contains outdated information and has to include the new data from the European Environment Agency).
- ✖ ***National Strategy on Climate Change for Romania (SNSC)*** which summarizes the *Romanian strategy for meeting its commitments to the EU and UNFCCC* (it has to be revised in line with the outcomes of recent international negotiations).

RECOMMENDATIONS 5

III. Integration into the European energy community. Romania, as a member of the EU, should comply with the 6 key priorities highlighted by the European Commission in the area of energy security:

- 1. To meet the EU 2020 goals: a 20% reduction in greenhouse gas emissions** from 1990 levels, a 20% increase in the share of renewable energy sources in final energy consumption, and a 20% increase in energy efficiency. In order to meet these goals, Romania should be part of the EU efforts to develop new technologies.
- 2. To further strengthen of the EU internal energy market.**
- 3. To develop the national energy infrastructures as vital elements of the EU internal market.**
- 4. To enhance emergency preparedness** against possible future energy crises. Romania should consider early implementation of the EU proposed policies in this area.
- 5. To diversify the sources of energy supply comprising three elements: supply countries, supply companies, and supply routes.** The development of the Southern Corridor and of the Nabucco project in particular is a strategic priority for Romania.
- 6. To pursue a gradual replacement of the previous inter-governmental agreements with a joint new EU framework.**

RECOMMENDATIONS 6

- ✖ Romania should be actively involved in the preparation of the EU energy-related legislative and regulatory framework, which may eventually shape (or have an impact on) agreed international standards in areas such as:
 - + **From problem to solution- Waste-to-energy projects** should be supported and regarded as a high priority for the Romanian Government.
 - + **Smart grids and smart metering;**
 - + **Standardization of required infrastructure for electric vehicles,** including car-charging, battery exchange facilities and interfaces with interoperable plugs;
 - + **Operational requirements for carbon capture and storage facilities;**
 - + Optimal incentives for the non-discriminatory development of low carbon power production from renewable and alternative sources.
 - + Definition of **energy poverty** and agreed ways to cope with it.

RECOMMENDATIONS 7

Medium and long term strategic vision

- ✖ Romania should contribute to a unified European energy strategy and a integrated energy market. Access to market is one of the strategic factors in ensuring energy security for all public and private stakeholders.
- ✖ **Serious Gaming: ROSTREC Online applications for policy formulation**
- ✖ Romania should support the current and future energy projects aiming to diversify the sources of supply and **to reduce energy dependency**.
- ✖ Romania should continue to develop its **energy infrastructure and functional interconnection with regional and European networks**. The implementation of smart grids projects and the transformation of electric network into interactive networks will follow one of the main European priorities.
- ✖ **Romania should seek solutions to reduce the current technological gap in relation to other EU member states** in the energy sector, to ensure the transfer of know-how and new technologies through privatizations, joint ventures, direct and indirect foreign investments, and public-private partnerships.

RECOMMENDATIONS 8

- ✘ **The facilities in the field of energy infrastructure**, even though they are operational, are not sufficient to cover all the needs of the domestic market.
- ✘ Romania's strategic options have in view the rapid development of effective, specialized infrastructure networks . For this purpose comprehensive programmes of national investments will have to be launched in cooperation and partnership with other member states of the European Union and NATO supported by **proactive energy diplomacy**.
- ✘ **Further steps must be taken to reinforce Romania's position as a reliable transit country that has important possibilities and responsibilities for the security of the current and future energy routes to Central and Western Europe.**
- ✘ **Romania should develop two-way interconnection capacities to neighbouring countries and the European gas grid.**
- ✘ Given the abiding interest of **Romania to promote security and stability in the wider Black Sea region**, an important role can be assigned to further initiatives within the existing regional structures addressing mainly the issues of critical infrastructure.

RECOMMENDATIONS 9

- ✖ Educational programmes will have a positive impact only if they benefit from an integrated European vision with a **strong simulation dimension**, such as CAE type applications for crisis management, and access to new technological tools, including virtual networks and e-learning.
- ✖ **The Regional Centre for Training and Research on Critical Services and Infrastructures Protection (PROCSI)** - an EURISC Foundation project – could, under the above-mentioned circumstances, develop a pilot educational project in the field of the protection and resiliency of critical services and infrastructures for energy security, at national and international level.
- ✖ Special attention should be paid to strategic investors. There is a need to improve the existing legal and economic framework for public-private partnership in the energy sector. **The public-private partnership is actually a trilateral relationship: state sector, private Romanian sector and foreign private sector** (several foreign energy players are present in Romania from Austria, Azerbaijan, Canada, Czech Republic, Germany, France, Hungary, Italy, Russia, Spain, Kazakhstan, USA

RECOMMENDATIONS 10

- ✖ For a coherent and integrated energy strategy, Romania should adjust to the new trends in the field such as **using, developing and promoting the concepts of energy diplomacy as part of foreign policy. This integrative concept covers the political, economic, security and societal dimensions of foreign policy.**
- ✖ Romania should promote EU solidarity and burden sharing in crisis situations. The IEA system for oil and oil products stocks could be a model for defining **minimum storage volumes and key pipeline two-way connections.**
- ✖ The Romanian relevant authorities should accelerate a review of the possibilities to utilize **the depleted gas fields as strategic gas storage.**
- ✖ In the field of scientific research and technological development (R&D), Romania should select those projects that are eligible for maximum EU funding under the SET (**Strategic Technologies Plan**) programme.

RECOMMENDATIONS 11

- ✖ One of the Romanian cities may become a participant in the **Smart Cities Initiative** under the EU energy efficiency scheme. By 2020 the initiative should put 25 to 30 European cities at the forefront to a low-carbon future: smart grids, a new generation of buildings and low-carbon transport solutions.
- ✖ Romania has to become actively involved in the SET Plan. **The sustainable nuclear fission initiative is one of the areas of special interest in view of existing Romanian expertise.** The European target is to have in place and operate by 2020 the first generation IV prototype. The first co-generation reactor could also become a demonstration projects to test the technology for coupling with industrial processes.
- ✖ **A practical solution proposed by the ROSTREC project is to promote the use of “Serious Gaming: ROSTREC Online” type of applications by public and private companies, and by governmental institutions in Romania.** This solution in support of decision making may also be considered by international institutions and organisations such as the EU, NATO, World Bank, IMF a.o.

ENERGY SECURITY WAR ROOM - ENSEWARO

- ✖ Key national and European decision-makers, entrepreneurs, business leaders, policy experts, researchers, and thought leaders to focus on integrated and comprehensive solutions on energy security and policy resilience.
- ✖ The solution to cope with political, strategic, technology and policy gaps, principal-agent problems, information and intelligence gaps, and lack of common standards.
- ✖ Future end users : EC, NATO, private and public companies, international organizations in the field of energy

PROCSI

Regional Center For Training And Research On Critical Services And Infrastructures Protection

- ✖ The PROCSI Center will concentrate technical and human resources necessary to train and develop solutions for the protection of the critical infrastructures in the region
- ✖ The main center based in Bucharest and the centers held in the states of the region will have simulation facilities and will store the complete data base on national critical infrastructures (energy, transport, IT, a.o.).
- ✖ This is the result of a public-private partnership, important for the development of the economy of individual countries as well as of the region

Thank you for your
attention!

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