

# *Evaluation and Strategy Selection in the Anti-crisis Management of the Energy Sector Industry*

**Marina Petrova Marinova-  
Stoyanova**

*Department of Industrial  
Management*

*Technical University of Varna*

Varna, Bulgaria mpmstoyanova@tu-  
varna.bg.

**Abstract.** This paper examines the significance of evaluation and strategy selection in the anti-crisis management of the energy sector industry. In a volatile and rapidly evolving energy industry landscape, making informed choices regarding management strategies becomes crucial for ensuring the efficient and sustainable operation of energy companies. By analyzing the current context and employing relevant theoretical models and concepts, the article provides an overview of key aspects related to the evaluation and strategy selection in the anti-crisis management of the energy sector industry.

**Keywords:** anti-crisis management, energy sector, preventive measures, strategy selection.

## I. INTRODUCTION

The energy sector plays a critical role in powering economies and supporting the functioning of various industries. However, there are also crises in the energy sector and disruptions that can significantly impact its operations, supply chains, and overall stability. Therefore, the evaluation and strategy selection in the anti-crisis management of the energy sector industry are of utmost importance.

The evaluation and strategy selection processes in anti-crisis management involve assessing the vulnerabilities and risks faced by the energy sector, identifying appropriate measures to mitigate and respond to potential crises, and formulating strategies that enhance resilience and ensure continuity of operations [1]. These processes are essential for organizations operating in the energy sector to effectively anticipate, prevent, prepare for, and respond to crises that may arise from a variety of factors such as natural disasters, geopolitical tensions, technological failures, market fluctuations, or cybersecurity threats.

The evaluation phase of anti-crisis management involves a comprehensive analysis of the energy sector's vulnerabilities and risks. This includes evaluating the critical infrastructure, supply chains, regulatory frameworks, and potential threats that could disrupt energy production, distribution, or consumption [2]. Through this evaluation, organizations can identify key areas of vulnerability and prioritize resources and efforts towards addressing these weaknesses.

Once the vulnerabilities and risks are assessed, the strategy selection process is applied. This phase involves developing proactive measures to prevent or minimize the impact of potential crises [2]. It includes the formulation of contingency plans, crisis response protocols, and business continuity strategies tailored to the specific needs of the energy sector. These strategies aim to enhance preparedness, ensure effective communication and coordination among stakeholders, and enable prompt decision-making in times of crisis.

Furthermore, the evaluation and strategy selection processes in anti-crisis management should take into account the dynamic nature of the energy sector. Factors such as evolving technologies, changing regulatory landscapes, and shifting market conditions necessitate continuous monitoring and adaptation of strategies to address emerging risks and challenges. By evaluating the effectiveness of implemented measures and regularly updating strategies, organizations can remain agile and resilient in the face of evolving threats.

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## II. EVALUATION LEVEL OF VULNERABILITY OF THE ENERGY SECTOR INDUSTRY GENERAL REGULATIONS

In the dynamic landscape of the energy sector industry, understanding and assessing the level of vulnerability of organizations and sectors becomes essential for effective anti-crisis management. Vulnerability assessment enables energy companies to identify potential risks and weaknesses, allowing them to develop strategies that address these vulnerabilities proactively.

Vulnerability refers to the susceptibility of an organization or sector to external and internal risks and threats. It encompasses various dimensions, including operational, financial, technological, regulatory, and environmental vulnerabilities [4]. An organization's vulnerability is influenced by factors such as its size, structure, geographical location, dependency on external resources, and market conditions. Recognizing and comprehending the specific vulnerabilities within the energy sector industry is crucial for effective anti-crisis management.

Components of vulnerability assessment. Vulnerability level assessment involves a systematic and comprehensive analysis of various components. These components highlight several important steps:

**Risk Identification.** Identifying potential risks is a fundamental step in vulnerability assessment. It entails examining internal and external factors that could negatively impact an organization or sector. Internal risks may include outdated infrastructure, inadequate maintenance practices, or insufficient cybersecurity measures, while external risks may involve regulatory changes, market volatility, natural disasters and etc.

**Risk Severity Analysis.** Once risks are identified, assessing their severity is essential. This analysis considers the potential impact of each risk on the organization or sector. Severity evaluation allows prioritization of risks based on their potential consequences, enabling efficient allocation of resources and proactive risk mitigation.

**Weakness Identification.** Vulnerability assessment also involves identifying weaknesses within the organization or sector that contribute to its susceptibility to risks. Usually weaknesses encompass gaps in policies, outdated technologies, insufficient training, or inadequate contingency plans. Understanding these weaknesses helps in developing strategies to strengthen the organization or sector against potential crises [5].

**Resource Evaluation.** Assessing the availability and adequacy of resources to manage risks is another crucial aspect of vulnerability assessment. This includes evaluating financial resources, technological capabilities, human capital, and partnerships. Identifying resource gaps facilitates the development of strategies to acquire or allocate resources effectively.

**Methodologies for Vulnerability Assessment.** Several methodologies can be employed to conduct

vulnerability assessments within organizations and sectors in the energy sector industry. These methodologies include:

**The SWOT** (Strengths, Weaknesses, Opportunities, Threats) analysis framework enables the identification of internal strengths and weaknesses and external opportunities and threats [6]. This analysis helps in understanding the organization's or sector's position in the industry and potential vulnerabilities.

**Risk mapping** involves visualizing and mapping potential risks based on their likelihood and impact. It provides a comprehensive view of the organization's or sector's risk landscape and helps in identifying significant vulnerabilities.

**Scenario analysis** involves developing hypothetical scenarios of potential crises and assessing their impact on the organization or sector. This methodology aids in understanding vulnerabilities under different circumstances, guiding the development of strategies to address them effectively.

Assessing the level of vulnerability within organizations and sectors operating in the energy sector industry is a paramount component of anti-crisis management [7]. It enables proactive identification and mitigation of risks, strengthening the organization's or sector's resilience. Through systematic risk identification, severity analysis, weakness identification, and resource evaluation, vulnerability assessment helps in developing strategies that enhance the organization's or sector's ability to withstand crises. Employing methodologies such as SWOT analysis, risk mapping, and scenario analysis aids in conducting comprehensive vulnerability assessments. Ultimately, a robust vulnerability assessment lays the foundation for effective anti-crisis strategies and contributes to the overall resilience of the energy sector industry [8].

## III. IDENTIFICATION OF KEY AREAS OF THE ORGANIZATIONS IN THE ENERGY SECTOR INDUSTRY

In the process of evaluating and selecting strategies for anti-crisis management in the energy sector industry, the identification of key areas within an organization or sector is crucial. These key areas refer to the critical components, functions, and assets that significantly impact the organization's or sector's ability to effectively manage and navigate through crises. They encompass a wide range of aspects, including operational processes, infrastructure, human resources, financial resources, technological capabilities, regulatory compliance, and stakeholder relationships [9]. By understanding and prioritizing these key areas, organizations and sectors can strategically allocate resources, develop targeted crisis response strategies, and enhance their overall resilience.

Various methodologies can be utilized to identify these key areas. One such methodology is business impact analysis (BIA), which involves systematically assessing and evaluating the potential impacts of disruptions on different aspects of the organization or sector [10]. BIA helps in identifying key areas by considering the potential

consequences of disruptions on operations, customer satisfaction, financial stability, and regulatory compliance.

Risk assessment is another important methodology for identifying key areas. It involves the identification, analysis, and evaluation of potential risks that could impact the organization or sector. By examining the likelihood and impact of different risks on critical functions and assets, organizations and sectors can prioritize and focus their efforts on key areas that are most susceptible to disruptions.

Stakeholder engagement also plays a crucial role in identifying key areas. Engaging with stakeholders such as employees, customers, suppliers, and regulatory authorities allows organizations and sectors to gain valuable insights into the critical functions, processes, and assets from different perspectives. This input helps in aligning the organization's or sector's objectives with stakeholder expectations and priorities, ultimately aiding in the identification of key areas.

Expert consultation is yet another effective method for identifying key areas. Seeking input from subject matter experts and industry professionals provides specialized knowledge and experience that can aid in understanding the critical functions, dependencies, and vulnerabilities within the organization or sector. Expert consultation helps in gaining insights into emerging trends, best practices, and potential risks that should be considered in the identification of key areas.

Therefore, the identification of key areas holds immense importance in anti-crisis management. It enables organizations and sectors to allocate resources effectively and efficiently, mitigate risks, enhance preparedness, and develop strategies that address vulnerabilities. By focusing on these key areas, energy sector companies can navigate through crises more effectively, minimize disruptions, and ensure long-term sustainability and success.

#### IV. FORMULATION OF KEY INDICATORS IN ANTI-CRISIS MANAGEMENT OF THE ENERGY SECTOR INDUSTRY

In the evaluation and strategy selection of anti-crisis management in the energy sector industry, formulating key indicators is particularly important in effectively monitoring and measuring performance. These indicators provide measurable criteria that help assess an organization's or sector's ability to manage crises successfully. They serve as essential tools for tracking progress, identifying areas for improvement, and making informed decisions. By formulating key indicators, energy sector companies can establish a comprehensive framework for monitoring and measuring their performance in critical areas of anti-crisis management, thereby enhancing their resilience and driving continuous improvement.

The process of formulating key indicators begins with clearly defining specific and measurable objectives that align with the anti-crisis management strategy. These objectives provide a clear direction for developing relevant indicators that can effectively measure progress and outcomes.

Once the key indicators are identified, it is essential to select appropriate measurement metrics that accurately reflect the desired outcomes [11]. These metrics should be objective, reliable, and directly relevant to the identified objectives and performance areas. It is beneficial to adopt a balanced approach by incorporating both quantitative and qualitative measures to provide a comprehensive assessment of performance.

To establish a baseline for measuring progress, organizations need to evaluate their current performance levels in the identified key indicators. This baseline serves as a reference point and provides a benchmark against which future progress can be measured. Furthermore, setting realistic and achievable targets helps define the desired level of performance and provides a clear direction for improvement.

Other fundamental components of the formulation process are the data collection and analysis. A structured data collection plan should be developed to gather relevant information aligned with the selected indicators. The data collected should be consistent, reliable, and accurately reflect the performance in the key areas. Through thorough analysis, organizations can track trends, identify patterns, and evaluate their performance against the set targets. This analysis provides valuable insights into areas that require further attention and improvement.

Furthermore, effective reporting and communication of key indicator findings are crucial for fostering transparency, accountability, and informed decision-making. Clear and concise reports should be generated to present the performance of key indicators to relevant stakeholders. These reports should provide actionable insights and recommendations, enabling stakeholders to make informed decisions and drive improvements in anti-crisis management.

Formulating key indicators in the energy sector industry can present certain challenges. These challenges may include ensuring the availability and quality of data, measuring complex aspects such as reputational risks or stakeholder satisfaction, aligning indicators with strategic objectives, and adapting to evolving risks and contexts. Organizations must address these challenges through robust data management practices, stakeholder engagement, and regular review and refinement of indicators.

As the formulation of key indicators is of particular importance in the evaluation and strategy selection of anti-crisis management in the energy sector industry, by setting measurable criteria and aligning them with objectives, organizations can make informed decisions and continuously improve their anti-crisis management efforts in the dynamic energy sector.

#### V. FORMATION OF A TEAM IN AN EXPERT CRISIS CENTER

In the evaluation and strategy selection of anti-crisis management in the energy sector industry, the formation of a team in an expert crisis center plays a pivotal role in

ensuring a prompt, effective, and coordinated response to crises [12]. A well-structured and skilled crisis response team is of utmost importance in addressing the complexities, uncertainties, and challenges that arise during crisis situations. This process delves deep into the significance of team formation and explores a comprehensive range of key considerations for building a highly effective crisis response team within the energy sector industry.

***The Significance of Team Formation.*** The formation of a crisis response team in an expert crisis center holds immense significance for effective anti-crisis management in the energy sector industry. Crises can have severe implications on the operations, reputation, and overall stability of organizations operating in the energy sector. By assembling a dedicated crisis response team, organizations can ensure a timely and coordinated response, enabling them to mitigate the impact of crises, minimize disruptions, protect stakeholders' interests, and ultimately enhance resilience.

***Defining Clear Roles and Responsibilities.*** One significant aspect of team formation is the clear definition of roles and responsibilities for each team member. By establishing a well-defined structure and assigning specific tasks and areas of responsibility, organizations can foster a sense of clarity, accountability, and ownership within the crisis response team. This enables smooth coordination, effective decision-making, and streamlined communication during crisis situations.

***Incorporating Diverse Expertise and Skills.*** Building a highly effective crisis response team requires the incorporation of diverse expertise and skills that are relevant to the energy sector industry. The energy sector encompasses various domains, including technical, operational, legal, regulatory, financial, communication, and stakeholder management. By assembling individuals with a wide range of competencies, organizations are able to tap into a diverse pool of knowledge and perspectives, enabling comprehensive analysis, innovative problem-solving, and strategic decision-making during crises.

***Fostering Effective Communication and Collaboration.*** Effective communication and collaboration lie at the heart of a successful crisis response team. Establishing clear channels of communication, both internally within the team and externally with relevant stakeholders, is paramount for the exchange of critical information, timely decision-making, and seamless coordination of actions. By fostering an environment of open and transparent communication, organizations can ensure that the crisis response team is well-informed, aligned in their efforts, and able to respond swiftly to evolving crisis situations [13].

***Continuous Training and Development.*** The importance of continuous training and development cannot be overstated in the formation of a highly effective crisis response team. Crisis management is a dynamic field

that requires individuals to stay abreast of emerging trends, evolving regulations, best practices, and technological advancements. By providing regular training programs, workshops, simulations, and knowledge-sharing platforms, organizations can enhance the team's capabilities, build their confidence, and prepare them to handle a wide range of crisis scenarios effectively [14].

***Establishing Strong Leadership and Decision-Making Structures.*** Effective leadership and decision-making are fundamental for guiding the crisis response team during high-pressure situations. A designated team leader or coordinator with strong leadership qualities, including the ability to remain calm under pressure, make informed decisions, and inspire trust and confidence, is instrumental in steering the team towards successful crisis management. Clear decision-making processes, defined authority frameworks, and a collaborative decision-making culture should be established to empower team members and facilitate agile decision-making during crises.

***Promoting Collaboration with External Stakeholders.*** Collaboration with external stakeholders, including government agencies, regulatory bodies, industry associations, local communities, and other relevant entities, is critical for comprehensive crisis management in the energy sector industry. By establishing effective partnerships, communication channels, and information-sharing mechanisms with external stakeholders, organizations can leverage additional resources, expertise, and support during crisis situations. This collaborative approach enhances the team's capacity to access critical information, coordinate actions, and mobilize resources effectively.

***Regular Evaluation and Improvement.*** The formation of a crisis response team is an ongoing process that requires regular evaluation and continuous improvement. After each crisis event or exercise, a thorough review should be conducted to assess the team's performance, identify areas for improvement, and incorporate lessons learned. This feedback-driven approach ensures that the crisis response team evolves, adapts, and enhances its capabilities based on real-world experiences and evolving industry dynamics.

As the formation of a highly effective crisis response team in an expert crisis center is essential for efficient and coordinated anti-crisis management in the energy sector industry, by considering key aspects such as defining clear roles and responsibilities, incorporating diverse expertise, fostering effective communication and collaboration, providing continuous training and development, establishing strong leadership and decision-making structures, promoting collaboration with external stakeholders, and conducting regular evaluations, organizations can build a resilient and agile crisis response team. Such a team will be well-equipped to navigate through crises, mitigate their impact, and safeguard the interests of stakeholders, ultimately contributing to the

long-term sustainability and success of organizations in the energy sector industry.

## VI. DEVELOPMENT OF PREVENTIVE MEASURES

In the evaluation and strategy selection of anti-crisis management in the energy sector industry, the development of preventive measures plays a crucial role in mitigating risks and reducing the occurrence and impact of crises. By implementing proactive measures, organizations in the energy sector can enhance their resilience and minimize vulnerabilities that may lead to crises [15].

**Risk Assessment and Identification.** The development of preventive measures begins with a thorough assessment and identification of potential risks and vulnerabilities specific to the energy sector industry. This involves analyzing operational, technical, regulatory, and market risks that the organization may face. By understanding these risks, organizations can design targeted preventive measures that address the identified vulnerabilities.

**Proactive Planning and Preparedness.** Once risks are identified, proactive planning and preparedness are essential in developing effective preventive measures. Organizations should create contingency plans, crisis response protocols, and standard operating procedures to guide their actions during potential crises. Regular review, updating, and testing of these plans through drills and simulations ensure their effectiveness. Preparedness allows organizations to respond swiftly and effectively, reducing the impact and duration of crises.

**Enhanced Infrastructure and Technology.** Investing in enhanced infrastructure and technology is crucial in developing preventive measures. This includes implementing robust monitoring systems, early warning mechanisms, and advanced data analytics tools. Such technologies enable organizations to detect and address potential risks in real-time, preventing them from escalating into full-scale crises. Additionally, robust cybersecurity measures protect critical infrastructure and safeguard against cyber threats that could disrupt operations.

**Stakeholder Engagement and Communication.** Effective stakeholder engagement and communication are vital components of preventive measures. Organizations should establish strong relationships with employees, local communities, government agencies, and industry partners. Transparent and regular communication channels should be established to disseminate important information, address concerns, and foster collaborative efforts in risk mitigation. Engaging stakeholders creates a sense of shared responsibility and strengthens overall resilience.

**Training and Skill Development.** Training and skill development programs should be implemented to enhance employees' risk awareness, crisis response capabilities, and effective communication skills. Employees should be

equipped with the necessary knowledge and skills to identify early warning signs, respond promptly to potential risks, and take appropriate preventive actions. Regular training sessions, workshops, and knowledge-sharing initiatives foster a culture of preparedness and proactive risk management.

**Continuous Monitoring and Evaluation.** Preventive measures should undergo continuous monitoring and evaluation to ensure their effectiveness. Regular assessments, audits, and reviews help identify gaps and assess the performance of preventive measures. By actively monitoring their effectiveness, organizations can adapt to evolving risks, technological advancements, and regulatory changes, maintaining a proactive stance in crisis management.

In essence, the development of preventive measures is fundamental in anti-crisis management for the energy sector industry, as the organizations from the sector can enhance their resilience and reduce the likelihood and impact of crises. Implementing robust preventive measures not only safeguards operations and assets but also strengthens the overall reputation and sustainability of organizations in the energy sector industry.

## VII. CONCLUSION

Evaluation and strategy selection in the anti-crisis management of the energy sector industry are crucial for ensuring resilience and continuity in the face of potential crises. By assessing vulnerabilities and risks, organizations can allocate resources effectively to mitigate and manage these risks. Proactive strategy selection, including contingency plans and business continuity strategies, enhances preparedness and enables swift decision-making during crises. Adapting to the dynamic nature of the energy sector and regularly evaluating and updating strategies is essential for addressing emerging challenges. Prioritizing effective anti-crisis management safeguards operations, critical infrastructure, and contributes to the stability and security of energy supply.

## REFERENCES

- [1] F. Cucchiella, D'Adamo, I. and Gastaldi, M. 2015. Financial analysis for investment and policy decisions in the renewable energy sector. *Clean Techn Environ Policy* 17, pp. 887–904, DOI: 10.1007/s10098-014-0839-z.
- [2] S.E. Hosseini, 2020. An outlook on the global development of renewable and sustainable energy at the time of Covid-19. *Energy Research & Social Science* 68, DOI: 10.1016/j.erss.2020.101633.
- [3] L.A. Kostyrko, 2015. Formation of strategy of anti-crisis financial management of the enterprises in the conditions of uncertainty analytical maintenance of management. *Chasopys ekonomichnykh reform* 4, pp. 61–69.
- [4] R. Kothari, R. 2017. *Financial management: a contemporary approach*. Los Angeles: SAGE, pp. 658–666.
- [5] P., Crifo, Roudaut, G., 2022, 12, 1227-1258, *Economic Crisis and Corporate Governance: How Can Board Independence and Expertise Maximize the Firm Value?*
- [6] R. Sanchis et al. 2020 – Sanchis, Canetta, L. and Poler, R. 2020. A conceptual reference framework for enterprise resilience enhancement. *Sustainability* 12(4), 1464, DOI: 10.3390/su12041464.

- [7] A.M. Shtanghret, 2016. Anti-crisis technologies in the management of economic security of the enterprise. Lviv: Ukr. akad. Drukarstva, 249 p.
- [8] O.O., Tereshchenko, and Pavlovsky, S.V. 2016. Improving the financial mechanism of anti-crisis management of the enterprise. *Finansy Ukrainy* 6, pp. 108–123.
- [9] V. D., Gordienko, Vorob'eva, N. V., Makhonich, I. V., Rubanov, M. N., 2022, *Theory and practice management*, Lugansk – Krasnoyarsk, ISBN 978-5-86433-922-0
- [10] O.A. Baranovsky 2018. Theoretical aspects of assessing the financial stability of the enterprise. *Ekonomika i suspijlstvo* 15, pp. 206–212
- [11] H. Doroshuk, 2021, Prospects and efficiency measurement of artificial intelligence in the management of enterprises in the energy sector in the era of Industry 4.0. *Polityka Energetyczna – Energy Policy Journal* 24(4), pp. 61–76, DOI: 10.33223/epj/144083
- [12] S. Khalatur et al. 2020 – Khalatur, S., Kriuchko, L. and Sirko, A. 2020. World experience adaptation of anti-crisis management of enterprises in the conditions of national economy's transformation. *Baltic Journal of Economic Studies* 6(3), pp. 171–182, DOI: 10.30525/2256-0742/2020-6-3-171-182.
- [13] N. Kuzmynchuk et al. 2021 – N. Kuzmynchuk, Kutsenko, T., Zyma, O., Terovanosova, O. and Bachkir, I. 2021. Paradigm towards ensuring of energy saving in the crisis management conditions in the aspect of sustainable environmental development. *E3S Web Conf.* 255, 01022, DOI: 10.1051/e3sconf/202125501022.
- [14] R. Meiste and Jakstiene, S. 2015. Crisis Diagnosis in Anti-Crisis Management Process in a Company. *Oeconomia Copernicana* 6(4), pp. 49–58, DOI: 10.12775/OeC.2015.028.
- [15] N. Mocanu, 2018. Implementation of Anti-Crisis Management Technologies. *International Journal of Innovation in the Digital Economy (IJIDE)*, IGI Global, 9(4), pp. 11–23, DOI: 10.4018/IJIDE.2018100102.