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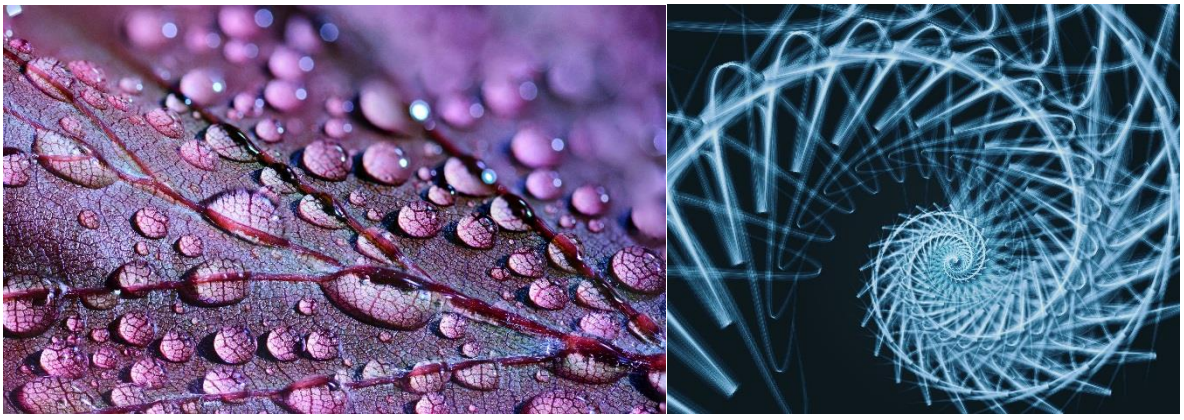

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# CONSUMER DECISION–MAKING IN THE EXOTIC ERA OF FOOD PRICES: WILLINGNESS–TO–PAY, DETERMINANTS, AND SOME LESSONS

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**ABSTRACT**

Consequences of market lockdowns due to the Covid–19 pandemic and global shocks in energy and food markets have been a tangible reality throughout Europe. The developments have been surprising for consumption economy in Albania. Given the context and predictions the research within consumer behavior and willingness to pay (WTP) may be of interest theoretically and practically.

The study objective is to provide a multidisciplinary observation through a quantitative measurement of three groups of variables, such as (a) socio–economic; (b) psychological–social; and (c) motivational and their possible effect to WTP for food products in the markets of Tirana. Living labs should consider the effectiveness of multidisciplinary theories within the segment and beyond.

**KEY WORDS**: WTP, income, consumption, food safety.

**ABSTRAKT**

Die Auswirkungen der Marktschließungen aufgrund von Pandemie 19 und Globale Erschütterungen auf dem Lebensmittel — und Energiemarkt waren eine sehr greifbare Realität in Europa. Die Entwicklungen in der Verbrauerwirtschaft waren überraschend in Albanien. Laut der Prognosen die Suche nach Zahlungsbereitschaften sind von theoretischem und praktischem Interesse.

Der Hauptgrund dieser Studie ist eine vielfaltige Beobachtung zu sichern durch unterschlidliche Gruppen, wie z.B (a) sozialökonimische; (b) psykologischsozialen; und (c) motiverende und ihre mögliche Beeinflussung auf dem Lebensmittel auf den Märkten in Tirana. Lebende Laboren sollten die Wirksamkeit von Multidisziplinäre Theorien innerhalb des Segments und darüber hinaus berücksichtigen.

**STICHWORTE:** Zahlungsbereitschaft, Einkommen, Konsum, Lebensmittelsicherheit.

**RÉSUMÉ**

Les conséquences des fermetures de marchés dues à la pandémie de Covid–19 et les chocs mondiaux sur les marchés de l'énergie et de l'alimentation ont été une réalité tangible dans toute l'Europe. Les développements ont été surprenants pour l'économie de consommation en Albanie. Compte tenu du contexte et des prévisions, la recherche sur le comportement du consommateur et la propension à payer (PP) peut être intéressante théoriquement et pratiquement.

L'objectif de l'étude est de fournir une observation multidisciplinaire à travers une mesure quantitative de trois groupes de variables, telles que (a) socio–économiques; (b) psychologiques–sociales; et (c) motivationnelles et leur effet possible sur le PP pour les produits alimentaires sur les marchés de Tirana. Les laboratoires vivants devraient considérer l'efficacité des théories multidisciplinaires au sein du segment et au–delà.

**MOTS CLÉS:** Propension à payer (PP), revenu, consommation, sécurité alimentaire.

**INTRODUCTION**

Recent years and especially 2022 have been characterized by the consequences of market lockdowns due to the Covid –19 pandemics and further by global shocks in energy and food markets. These developments have been surprising and with consequences especially for the food markets in Albania. The broad socio–economic consequences of these dynamics and especially rising inflation in the last year have raised concerns over the consumption economy. Within the segment of consumer choice, willingness to pay (WTP) represents a very important part of consumer behavior. While consumption economy is an underutilized resource of the Albanian economy, consumer behavior from a theoretical point of view represents a subject of continuous research interest. Moreover, studies on consumer behavior and WTP can contribute for the increase of predictability in an unpredictable world, where borders, national factors and efficiency of resources use have suddenly become very important.

WTP varies between products, socio–economic context, differences and demographics, etc., among consumer groups (Batte et al. 2007), and over the time it may change (Clark et al. 2017). WTP my affected by tastes, preferences, attitudes or subjective norms etc., and new approaches such as post–consumption behavior (Nyer, 1997) have been developed with focus the segment and marketing. The determinants of WTP can be understood in a multidisciplinary way within the social dilemma (i.e. within socio–economic picture) including materialism, self–interest or ex–collectivism, facts, opinions, beliefs, etc., and their evaluations, and the degree of self–understanding about the importance of the consumption economy not merely statistically but as an potential for creating economic positives and socially a new and progressives environment where professionals can focus on solving problems for overcoming poverty by creating a professional society as part of the European way of living.

WTP may be related to groups of factors such as location (eg Mediterranean vs. continental), socio–economic or institutional, psychological–social such as religiousness, etc. White in his core–interdisciplinary work argues the link between religiousness and sustainable behavior (White, 1967), and value–belief–norm theory argues the importance of religiousness and its absolutist standard which indicate values, beliefs or decisions [Stern et al. 1999]. In 'The theory of price' Stigler (1966), while presenting the impact of theories on consumer choice — including zero–predictability tautological statements, emphasizes that society may not rely exclusively on the free preferences of consumers, because institutions may impose restrictions on the consumer choice and the productive system responds to their choices to the extent that they are free to choose goods, underlining the importance of the socio–economic factors and the latter is broadly supported [Lancaster, 1966; Becker, 1976].

The focus of the study is the evaluation of the potential impact of (a) socio-economic variables such as gender, age, family size, employees, income, consumption and education levels; (b) psychological ones such as religiousness; and (c) motivational such as food safety to WTP for food products in the markets of the city of Tirana, Albania. Research on WTP in the light of new theories can be valuable for professionals, responsible institutions, and micro–macroeconomic implications. More concretely, considering the specific context of dramatic developments in energy markets and the consequences on employment, income and consumption, the paper may be useful in several ways: (1) for consumption economics and potential predictability in consumers activities within the segment; (2) for market actors, consumer associations, agencies; and (3) for the data enrichment and expanding of instruments that can provide potentially optimal effects to the sustainable consumption.

The literature is characterized by diversity and contradictions over the set of factors that influence or have synergistic effects, on products or within the segment, between or beyond regions or countries, etc., regarding the key socio–economic factors or their influence to willingness to pay for food products. By Carpio et al. (2009), consumer age represents an influential factor to the willingness to pay for food products. Cranfield et al (2003) finds that young aged consumers have more willingness to pay a higher premium for food products. Maynard et al (2003), emphasizes that family size is related to willingness to pay more for meat products and varies for specific products by family age composition. Bellhouse et al. (2010), find that family size affects willingness to pay for meat products. Swinnen (2012), predicts that employees increase in some sectors across Europe has been accompanied by a positive increase in willingness to pay for products. McCluskey et al. (2007), find that employed status affects positively to willingness to pay. Stutzman (2020), show that income was the next most influential variable to the willingness to pay for meat product. Lusk et al. (1999), find that individuals with higher household income levels were willing to pay the largest premiums for meat product. Gil et al. (2000), submits that increasing consumption of specific food products may increase the willingness to pay more for these products. Krystallis et al. (2005), reveal that WTP differs according to the consumption of the category of food products and food safety affects willingness to pay for food products. Tsakiridou et al. (2008), reveals that the decision on the WTP a higher price is highly related to consumers' confidence on food safety of products. Sanjuán et al. (2003), predicts that willingness to pay for food products is heterogeneous within segment and vary between cities, levels of consumer's education, etc. Govindasamy et al. (1999), show that consumers with lower education level were willing to pay more a premium for food product compared with those with higher education levels. Vecchio et al. (2015), reveal a positive and statistically significant effect of gender (female) on WTP for food products. Tsakiridou et al. (2006), shows gender variable (women), as a factor influencing the willingness of consumers to pay more for food products. Ahmed et al. (2018), show that Muslim religiousness has a significant impact on willingness to pay for specific food products. Verbeke et al. (2013), show that consumers of Muslim religiousness are willing to pay a premium price for the meat product at the butcher shops. Heiman et al. (2004), explain that religion has established behavioral norms on the value traditional cooking, and Christian religiousness affects to WTP more.

***Objectives and hypotheses.*** The objective of the paper is to provide a multidisciplinary observation of theories and new approaches in consumer behavior and a quantitative measurement of three groups of variables: (a) socio–economic ones: gender, age, family size, employees, income, consumption and education levels; (b) psychological–social: such as religiousness; and (c) motivational: such as food safety to WTP more for meat product — according to consumer's perception in the markets of Tirana, Albania.

The study hypotheses are:

H1 — with age willingness to pay more for meat product increases;
H2 — increase of family size affects the increase of WTP more for the meat product;
H3 — increase of family employees affects the increase of WTP more for the meat product;
H4 — increase of family income affects the increase of WTP more for the meat product;
H5 — increase of consumption affects the increase of WTP more for the meat product;
H6 — increase of food safety affects the increase of WTP more for the meat product;
H7 — increase of primary education affects the increase of WTP more for the meat product;
H8 — increase of secondary education affects the increase of WTP more for the meat product;
H9 — increase of female gender affects the increase of WTP more for the meat product;

H10 — increase of Muslim religiousness affects the increase of WTP more for the meat product;
H11 — increase of Christian religiousness affects the increase of WTP more for the meat product.

***Measurement procedure.*** A quantitative questionnaire was used in the city markets of Tirana, by considering the heterogeneity of consumers (220). The interview was based on the standard procedure in which each sample has equal probability of being selected (random choice) and the above variables are verified according to scaling (1–5) in the respective sections. Based on data provided the statistical model Ordered Logit was used and the significance of variables is presented in the following table (table 1).

**Table 1. The significance of variables by Ordered Logit model.**

Model 2: Ordered Logit, using observations 1–220 (n = 219)
Missing or incomplete observations dropped: 1
Dependent variable: Willingness to pay
Standard errors based on Hessian

| | *Coefficient* | *Std. Error* | *z* | *p–value* | |
|---|---|---|---|---|---|
| Age | 0.370516 | 0.156721 | 2.364 | 0.0181 | ** |
| Family size | −0.192851 | 0.174089 | −1.108 | 0.2680 | |
| Family employees | 0.204182 | 0.190836 | 1.070 | 0.2846 | |
| Income | 0.00582632 | 0.00216948 | 2.686 | 0.0072 | *** |
| Consumption | 0.248304 | 0.0916400 | 2.710 | 0.0067 | *** |
| Food safety | 0.870073 | 0.187901 | 4.630 | <0.0001 | *** |
| Education_1 | −0.984865 | 0.442227 | −2.227 | 0.0259 | ** |
| Education_2 | −1.12150 | 0.350511 | −3.200 | 0.0014 | *** |
| Gender_0 | 0.330996 | 0.274830 | 1.204 | 0.2284 | |
| Religion_1 | −0.0137361 | 0.527591 | −0.02604 | 0.9792 | |
| Religion_2 | −0.0452052 | 0.550858 | −0.08206 | 0.9346 | |
| | | | | | |
| cut1 | −0.330406 | 0.953312 | −0.3466 | 0.7289 | |
| cut2 | 2.45459 | 0.920384 | 2.667 | 0.0077 | *** |
| cut3 | 5.26459 | 0.982703 | 5.357 | <0.0001 | *** |

| | | | |
|---|---|---|---|
| Mean dependent var | 2.940639 | S.D. dependent var | 0.778814 |
| Log–likelihood | −212.7326 | Akaike criterion | 453.4651 |
| Schwarz criterion | 500.9121 | Hannan-Quinn | 472.6276 |

Number of cases 'correctly predicted' = 115 (52.5%)
Likelihood ratio test: Chi–square (11) = 124.837 [0.0000]
Source: Data processed by authors.

**CONCLUSIONS AND DISCUSSIONS**

The paper in accordance with the objective provides a measurement of above variables and the outcome of the regression Ordered Logit Model (table 1) show the levels of significance; which mean that with increasing age, income, consumption, and food safety has a very high probability to pay more for meat product underlining the importance of key socio–economic and motivational factors. While family size, family employees, gender and religiousness (Muslim, Christian) have no influence, education levels (1, 2) have a very significant impact and are negatively related to WTP. This finding deserves further specific research. As we pointed out education levels vary widely and that there are contradictions on the impact of education. The literature also supports the link between the higher education factor and the willingness to pay more for food products which may be explained by the higher level of consciousness on food energies or motivational factors (healthy foods, food safety, etc). Hallak et al (2022) find a positive association of respondents with education level (Bachelor's degree) or higher to WTP for food products. Findings are consistent with other studies focusing on WTP in Albania and specifics of post–pandemic within food consumption (Osmani et al. 2021; Kolaj et al. 2022), highlighting the impact of motivational and socio–economic variables and extrinsic differences. Especially to the main determinants (income, consumption) should be paid attention because they may affect at all times and in many ways both the consumer behavior and the post–consumption behavior. Nyer (1997), show that emotions mediate to the cognitive appraisals, and the ego, or anger and shame effects to post–consumption behavior. Perhaps under the pressure of rising risks from poverty or deprivations, the above variables may have multiple effects on post–consumption behavior and the impact of emotions on satisfaction and the relationship to behavior is well–documented.

Given the size of the interview (small number), or subjectivism level among the interviewees (eg perceptions between WTP, purchase, eating, consumption, etc.) and especially specific context (eg post–pandemic, psychological effects, inflation, price increases, etc.) or casual links, but also referred to the trust to retailers versus certifications in Albania a measurement between buyers of a category (eg butcher shops) could have been more efficient. The study highlights the specifications within WTP for products but nevertheless some limitations may affect the level of generalizations. However, through a broad observation, it is evident that there is a theoretical gap and the research in consumer behavior can be viewed in the light of new theories, such as theory of planned behavior (Ajzen, 1985), value–belief–norm theory (Stern et al. 1999) and lastly post–consumption behavior (Nyer, 1997) where emphasized that cognitive appreceals as antecedents of emotions determines behavior; by explaining 'why–s' of beliefs within segments and beyond in marketing (eg polls predictability), perceptions, truths or experiences or positive and negative emotions and their impact for improving or deteriorating of the interviewees' skills. Deprivations and socio–economic consequences in post–consumption appraisals or beliefs can be both causes and consequences for the functioning of a system that is self–feeding within the zero–minimum interval, promoting opportunistic or ego–defensive behaviors and characteristics such as hypocrisy, ambiguity, misunderstanding or distrust. The recommendation for the research extension within the new theories and approaches is valid. We pointed out that WTP varies according to factors, or between products, and over time — but over time researcher's competencies on the same subject can be enriched. Economics is a way of seeing, and a good theoretical focus can enrich the corpus of competencies by making interventions simpler, and this could possibly be another lesson.

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# MAPPING AN EFECTIVE DECISION-MAKING PROCESS

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**ABSTRACT**

In the process of building a career, the educational process always starts from the fact that the successful execution of the tasks brings building an appropriate career that in the working life will be able to bring positive and in a certain moment negative results [Bibuljica, 2012]. Therefore, whenever we find ourselves in such a process, we need to establish our individual capabilities with the conditions that we need to meet through our career on a certain profile of individual profiling that will guarantee us building a successful career. Bearing in mind that building a career is a complex and complicated process, we should always be guided by the assumption that accepting the challenge of management will lead to the discovery of such knowledge that we should cover with appropriate decisions that will give expected results [Morgan and Krueger, 1993]; [Vujaklija, 2003].

In the overall organizational work, the career-building entity will be more efficient in calculating his choices if he plans the tasks before you start [JR Brent Ritchie, Charles R. Goeldner, 1994]; [Ritchie, Burns, Palmer, 2005]. You need to plan a time that can be devoted to even one hour in analyzing the matching process. Of course, one hour may not be enough to make one of the most important decisions in his life, but it will allow you minimal time to get started.

**KEYWORDS:** small and medium businesses, family business, retail, management, modern aspects

**ABSTRAKT**

Beim Aufbau einer Karriere geht der Bildungsprozess immer von der Tatsache aus, dass die erfolgreiche Ausführung der Aufgaben den Aufbau einer geeigneten Karriere mit sich bringt, die im Arbeitsleben positive und in einem bestimmten Moment auch negative Ergebnisse bringen kann [Bibuljica, 2012]. Daher müssen wir, wenn wir uns in einem solchen Prozess befinden, unsere individuellen Fähigkeiten mit den Bedingungen, die wir im Laufe unserer Karriere erfüllen müssen, in einem bestimmten Profil der individuellen Profilierung festlegen, das uns den Aufbau einer erfolgreichen Karriere garantieren wird. Angesichts der Tatsache, dass der Aufbau einer Karriere ein komplexer und komplizierter Prozess ist, sollten wir uns immer von der Annahme leiten lassen, dass die Annahme der Herausforderung des Managements zur Entdeckung solcher Kenntnisse führen wird, die wir mit geeigneten Entscheidungen abdecken sollten, die zu den erwarteten Ergebnissen führen werden [Morgan und Krueger, 1993]; [Vujaklija, 2003].

In der gesamten organisatorischen Arbeit wird die karriereföndernde Einheit effizienter bei der Berechnung ihrer Entscheidungen sein, wenn sie die Aufgaben plant, bevor sie beginnt [JR Brent Ritchie, Charles R. Goeldner, 1994]; [Ritchie, Burns, Palmer, 2005]. Sie müssen so viel Zeit einplanen, dass Sie auch nur eine Stunde für die Analyse des Matching-Prozesses aufwenden können. Natürlich reicht eine Stunde vielleicht nicht aus, um eine der wichtigsten Entscheidungen in seinem Leben zu treffen, aber es wird Ihnen ein Minimum an Zeit für den Anfang geben.

**STICHWORTE:** kleine und mittlere Unternehmen, Familienunternehmen, Einzelhandel, Management, moderne Aspekte

**RÉSUMÉ**

Dans le processus de construction d'une carrière, le processus éducatif part toujours du fait que l'exécution réussie des tâches permet de construire une carrière appropriée qui, dans la vie professionnelle, pourra apporter des résultats positifs et, à un moment donné, des résultats négatifs [Bibuljica, 2012]. Par conséquent, chaque fois que nous nous trouvons dans un tel processus, nous devons établir nos capacités individuelles avec les conditions que nous devons remplir tout au long de notre carrière sur un certain profil de profilage individuel qui nous garantira la construction d'une carrière réussie. En gardant à l'esprit que la construction d'une carrière est un processus complexe et compliqué, nous devrions toujours être guidés par l'hypothèse selon laquelle accepter le défi de la gestion conduira à la découverte de telles connaissances que nous devrions couvrir avec des décisions appropriées qui donneront les résultats escomptés [Morgan et Krueger, 1993] ; [Vujaklija, 2003]. Dans l'ensemble du travail d'organisation, l'entité qui construit sa carrière sera plus efficace dans le calcul de ses choix si elle planifie les tâches avant de commencer [JR Brent Ritchie, Charles R. Goeldner, 1994]; [Ritchie, Burns, Palmer, 2005]. Vous devez prévoir de consacrer ne serait-ce qu'une heure à l'analyse du processus d'appariement. Bien sûr, une heure ne suffira peut-être pas pour prendre l'une des décisions les plus importantes de sa vie, mais cela vous laissera un minimum de temps pour commencer.

**MOTS-CLÉS:** petites et moyennes entreprises, entreprises familiales, commerce de détail, gestion, aspects modernes

**INTRODUTION**

Do you carry out an independent assessment of your needs and requirements and have you analyzed your sources? Have you identified any career choices and gathered information around them? If so, you are ready for the last three steps in the career planning process, weighing the choices, making decisions, and planning how to reach your goal.

In your self-assessment, you want to gain a better understanding of your own needs, desires, and potential job qualifications. You daydream about the future and set some lofty life goals. Then you will read the same, discuss it and maybe try a few work careers that come up as opportunities. Now you will be able to calculate the demands and opportunities of the marketing career you have researched and decided which life goals will fulfill you. Ultimately, you will develop an action plan that will guide and prepare you for your chosen career.

**RESULTS AND DISCUSSION**

***Determining the process of making an assessment of the choice itself.*** In the next step of the planning process you will need to match the things you learned in the self-assessment with the career information you have gathered. The best tie will be the most logical career choice.

Some people start an informal career playing some processes while still in elementary school. This informal process is based primarily on observation, with very little real-world testing. They see their parents and relatives in their work roles [Dibb, Simkin and Pride, 1991]; [Behluli, Qerimi, Borisov and Hajdari, 2020]. They also see people in their work roles on television, in magazines, and in movies. Journal articles also provide informal information about your career. If you begin an informal process of planning your profession that will last several months or years, then a much more formal evaluation of your choices

will not last long. However, if you have no career goals, you should start with these lessons, maybe they will help you make the right decision [Krueger,2003]; [Behluli, Qerimi, Borisov, and Atanasov, 2019].

You will be more efficient in calculating your choices if you plan your tasks before you start. Plan time to devote at least an hour to analyzing the matchmaking process. Of course, an hour may not be enough to make one of the most important decisions of your life, but it will allow you a minimum amount of time to get started.

Collect all the notes you made in the self-assessment and all the information you gathered about the career. You will be able to analyze all the data and make a logical decision with a lot of writing, but it will be easier if you do the process by writing down some facts on paper. Use the personal career profile, which is in an evaluative format that will allow you to compare your self-assessment with a specific career extension or direction offer.

On the left side of the profile, write your information and only once. Then make several photocopies, one for each career you want to explore. Use these copies and fill in your information. After completing all profiles separately re-read all information carefully. Then ask yourself:

- Does this career match my personal values? Do work values matter in matching my personal values?
- Will the career fit in with my lifestyle goals? Will it provide adequate income? Is the job layout good for this career?
- Hope I can continue the education and training I need for this career? Will I have enough money to do it?
- Will the obligations and responsibilities of this career interest me? Will I be able to answer them?
- Will I have enough skills and abilities required for this career? Do I have the ability to learn the skills needed to advance in this career?
- How will my personality fit into this career?
- Will I find the work environment and working relationships in this career satisfying?

Using a personal career profile has the great advantage of being able to refer to it again and again for months and years in the future. Many people have doubts about their decision which they have to make and which they have already made. The profile provides an easy way to review your evaluation, and you should convince yourself with some wisdom or change your decision based on your point of view.

***Correct procedures in the process of making own decisions***. You are now ready for the penultimate step in the career planning process. It's time to make your own independent decision. What career would you like to get? You may feel that you are not making the right decision. You may want to spend more time thinking. After all, you won't have to make mistakes that won't affect you over the years, and maybe for the rest of your life. Your career choice is important. In fact, it may be the most important decision of your life. However, don't wait until you are completely sure about your career choice. If you do, you could end up waiting for years. Make the best choice you can at the moment, even if you think it might change later. Even a flexible goal will give you something to aim for.

Do you know any high school graduates who had a certain career choice? Do they have lifestyle goals? If so, are they making any progress towards achieving their goals or are they waiting for something to happen that will make their lifestyle dream come true? Some people at the age of 30 have not yet made their first career choice, they have not made a decision and most of them are lagging behind in the

decision-making process for their life profession. Make the first decision now, and you can continue planning the rest of your life. Don't wait for something to happen to direct your life - do it yourself.

Your career decisions, even those that change later on, will have a positive impact on your life. It will give him some sense of direction, provide him with a map showing where you want to go and how to get there.

In a few months or a year, you may feel that your choice was not the most suitable. Maybe you've overlooked some of the more important career information, or you've decided you don't want to make the unnecessary sacrifices necessary to reach your goal. Remember that you can review your career exploration plan at any time. If you have decided that another career is much more suitable for you, then there is no shame in changing your goal. In fact, it's doing the work you need to do.

Once again, don't waste a lot of time in deciding. If the opportunity is right, make a decision and move on with your life. How many people do you know who have wasted tens or thousands of dollars and years of their lives pursuing the wrong goals? How many adults do you know who are unhappy in their careers? When you notice that it is not working as it should, make a change. Don't be afraid of making the wrong decision. If you make a mistake, you can correct it. Even when the choice you are thinking about is better than no choice at all.

***Development of an action plan when making decisions****.* Have you decided which of the marketing careers you are researching best matches your self-research? If you have made up your mind, you can start planning how you will achieve these career goals. The plan does not guarantee success, but it will outline the steps you will need to take to reach your ultimate goal.

***Formulation of planned goals***. The small steps you will take to get from where you are to where your goals prefer. To give your life some sense of direction and to move you towards your ultimate career goal. Each time you reach your intended goal, you can gain confidence and boldly move on to the next goal.

***Be precise.*** How will you know if you are making any progress towards your end goal? The answer is, planning goals should include some details. Goal statements such as I want to become successful are not precise. Statements of purpose such as I want to get an education degree in marketing from the University of Kansas is more accurate. This type of goal planning will guide you towards achieving the ultimate goal. Certain goals can be easy to understand in terms of what you need to do to reach them. Write statements for all of your planned goals. Then read them all to see if they are accurate.

***Be realistic.*** Planned goals must be realistic. A realistic goal is one that you have a reasonable goal to reach. Few people can reasonably expect to become president of General Motors. If you have limited artistic values, you cannot expect to become a commercial actor. Think about your skills and capabilities. They will guide you towards your ultimate career goal.

***Work backwards*****.** When you set your intended goals, you will start with your ultimate career goal. Then you decide what your long-term goals are that you want to achieve in order to get to the end goal, what medium-term goals you will need to reach your long-term goals, and so on. You should work backwards, starting from the farthest target, and you should move towards the present day position.

Assume for example that your ultimate career goal is to own an advertising agency by the age of 40. One long-term goal might be to become an agency advertising executive by the age of 30. Once you have decided on what your medium and short term goals are you should make progress towards each

goal. One of your mid-term goals may be to obtain an advanced degree in marketing. A short-term goal would be to get some education in that field in college.

Planned goals can help you test your ultimate career goal. For example, assume one of your mid-term goals is to work freelance at an advertising agency. Your work experience can strengthen your career decision and make sure it's the right one. There is also a possibility that the opposite effect will occur. It can be convincing if you claim that the advertising agency is not fulfilling you in the way you expected it to be. In that case, testing your decisions may lead to a change in your ultimate career goal.

***Meeting the educational requirements criteria***. No matter what your career choice is, your plan of action should reach your goal and include some educational training. The amount can vary from a few days of on-the-job training to a four-year commitment to university education. High school graduation is the minimum educational requirement for most marketing jobs. You will be able to get a job without some academic education, but there could be few opportunities for advancement. Additionally, the jobs that don't require a college degree are often the jobs that no one wants. There is a very close correlation between the amount of education and lifetime earnings. Various studies show that the average person with a high school education earns 40% more assets during their lifetime than the person with a college education. For those who started working in 1995, this would represent a lifetime value of about $700,000 plus.

***On-the-job training***. You can learn many things during on-the-job training. The time required varies from a few days to several years. The starting salary is low, but your earnings will increase as you gain experience. Some businesses have structured training programs, including classroom lectures. (it may happen that you have already undergone these types of education if you work in the sales area). Other businesses can combine on-the-job experience and college education. Some businesses pay tutors to their employees to help them navigate the workplace.

If you are interested, ask the local employment agency about the possibilities of job training. Of course, you can apply directly to businesses where you know there are appropriate on-the-job training programs.

***Local education schools and local education centers*.** Community colleges are post-secondary institutions that offer instruction in targeted education. Since these schools are state-supported, you can attend them for free or for a very small fee. Programs are available for both high school students and adults.

Local education centers (also called skill centers) serve several students from a local geographic area. Students attend half-day classes in secondary schools and spend half the other time of the day in the education center.

***Technical institutes***. Technical institutes (also called trade schools) are two-year, post-secondary institutions that offer instruction in technical fields. Costs typically range from several hundred to several thousand dollars for a complete program. If you join a technical institute, you will have training in selected areas. Thus, you will be able to complete the entire program in two years or less.

***Community colleges***. Community colleges are two-year colleges that offer basic education and targeted education at colleges and universities. These state tax-supported colleges are called junior colleges or city colleges. You can attend a community college for less money than you would spend to attend a trade school. You will also often be able to transfer from a two-year to a four-year college or university education using college credits.

***Colleges and Universities.*** Some jobs in marketing do not require a college degree. Many of these same jobs can provide more opportunities for advancement if you have a college degree. Even as a beginner, you will earn a higher salary if you have a college degree.

***Choosing the best educational process.*** Choosing an education is like choosing a career. Follow the complete decision-making process to choose the best program and school for you. Your school counselor is a good place to start when you want information about targeted education and centers, technical institutions, community colleges, and colleges and universities. He or she should have a certain number of books for each of those institutions. Your school and nearest library should also have information about each school.

Choose your program and school that will best prepare you for your career. If you have not graduated in the current school year, there is still time to complete additional marketing school and related courses that will help you achieve your career goals. If you plan to complete educational training after secondary education, keep the following questions in mind:

- What is my ultimate career goal?
- What courses do I need to take to reach my goal?
- What education and training school is required to achieve my career goal?
- How much of that education and training do I have to complete before starting my career?
- Where can I get this education and training?
- How much will this education and training cost and where will I find the money?
- How much education can I get to get the job? Will freelance work help?

Once you have answered these questions, start writing your personal action plan and it is very important that you write everything down. Start with your long-term goals, then write down your medium-term goals and finish with your short-term goals. Also write down the date you would like to start and by which you would like to complete each goal. With this, you will be up to date with the activities that lead to the realization of your ultimate goal, the one that should turn your dream into reality.

**CONCLUSION**

A career change can be defined as a change in employment that is not in accordance with the usual career path in a certain field. For example, a psychologist becomes a manager, a lawyer becomes a school teacher. It can also be described as a change of job position to another professional category or area where the knowledge, skills and responsibilities of the previous job position are more or less. useless. A career change may differ from a normal job change in that the latter is characterized by a move to a similar job and follows an expected career path in a particular field (eg a programmer leaves his job because he got a better job at another company).

Research has shown that the personality dimension of openness to experience is an important factor in career change, as individuals with higher expressions of imagination, creativity, interest, and openness to new experiences are more likely to change career paths. Likewise, the probability of change was higher among individuals with a more pronounced dimension of extraversion, that is, among those who generally enjoy the company of others more and are more eloquent, optimistic and lively. This can be explained by the fact that such individuals have wider social networks and higher energy levels, which helps them

change their career. Some research, which focused only on job change, indirectly supports the relationship between extroversion and career change, as it showed that in samples of ironworkers, engineers and scientists, most of them refer to the social network when changing jobs. new job. However, some results also suggest that people with higher conscientiousness are less likely to make career changes. Namely, these people are more organized, disciplined, reliable and on average more planned during the events in their life, so they are likely to make more careful decisions about the future.

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# THE IMPACT OF BULGARIAN ENERGY SECTOR ON THE LEVEL OF GHG EMISSIONS

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**ABSTRACT**

Between 2005 and 2019, the energy sector remained the main source of GHG emissions in Bulgaria with the highest share in total emissions. In 2019, energy producers emitted 22.3 MtCO2e, i.e. a share of 39 %, which is a slight decrease compared with 2018 (40 %), followed by transport (16 %), industrial processes and product use (12 %), and agriculture (11 %).The aim of this article is to determine the impact of the energy sector on the country's greenhouse gas emissions.Through a system of indicators, we seek to assess both the primary and secondary effects of the GHG emissions. A significant share of the country's electricity production is generated by coal-fired power plants. Under the Green Deal, most of the coal-fired power capacity will be closed, destabilising the country's energy security if there is no clear strategy in place to restructure energy resources.

**KEYWORDS**: energy sector, GHG emissions, second order effects

**ABSTRACT**

Zwischen 2005 und 2019 blieb der Energiesektor die Hauptquelle von THG-Emissionen in Bulgarien mit dem höchsten Anteil an den Gesamtemissionen. Im Jahr 2019 emittierten die Energieerzeuger 22,3 MtCO2e, d. h. einen Anteil von 39 %, was einen leichten Rückgang gegenüber 2018 (40 %) bedeutet, gefolgt von Verkehr (16 %), industriellen Prozessen und Produktnutzung (12 %) und Landwirtschaft (11 %). Ziel dieses Artikels ist es, den Einfluss des Energiesektors auf die Treibhausgasemissionen des Landes zu bestimmen. Mit Hilfe eines Systems von Indikatoren versuchen wir, sowohl die primären als auch die sekundären Auswirkungen der Treibhausgasemissionen zu bewerten. Ein erheblicher Teil der Stromproduktion des Landes wird in Kohlekraftwerken erzeugt. Im Rahmen des Green Deal wird ein Großteil der Kohlekraftwerkskapazitäten stillgelegt, was die Energiesicherheit des Landes destabilisieren wird, wenn keine klare Strategie zur Umstrukturierung der Energieressourcen vorhanden ist.

**STICHWORTE:** Energiesektor, Treibhausgasemissionen, Effekte zweiter Ordnung

**RÉSUMÉ**

Entre 2005 et 2019, le secteur de l'énergie est resté la principale source d'émissions de GES en Bulgarie, avec la part la plus élevée des émissions totales. En 2019, les producteurs d'énergie ont émis 22,3 MtCO2e, soit une part de 39 %, ce qui représente une légère baisse par rapport à 2018 (40 %), suivis par les transports (16 %), les processus industriels et l'utilisation des produits (12 %), et l'agriculture (11 %). L'objectif de cet article est de déterminer l'impact du secteur énergétique sur les émissions de gaz à effet de serre du pays. Grâce à un système d'indicateurs, nous cherchons à évaluer les effets primaires et secondaires des émissions de GES. Une part importante de la production d'électricité du pays est générée par des centrales au charbon. Dans le cadre du Green Deal, la plupart des capacités de production au

charbon seront fermées, ce qui déstabilisera la sécurité énergétique du pays s'il n'y a pas de stratégie claire en place pour restructurer les ressources énergétiques.

**MOTS-CLÉS:** secteur de l'énergie, émissions de GES, effets de second ordre

**INTRODUCTION**

Between 2005 and 2019, the energy sector remained the main source of GHG emissions in Bulgaria with the highest share in total emissions. In 2019, energy producers emitted 22.3 MtCO2e, i.e. a share of 39 %, which is a slight decrease compared with 2018 (40 %), followed by transport (16 %), industrial processes and product use (12 %), and agriculture (11 %). In order to decarbonise the energy sector, Bulgaria's NECP highlights measures relating to renewable sources, energy efficiency, the internal market and energy security. Additional measures could also lead to progressive GHG emissions reduction, such as transition from coal to natural gas, increasing the share of heating and cooling from renewable sources, reducing losses in transmission networks, use of non-conventional fuels for primary energy production, and policies and measures in the household and public sectors. [EU progress on climate action – How are the Member States doing? - European Commission, Assessment of the final national energy and climate plan of Bulgaria, SWD (2020) 901, October 2020]

The aim of this article is to determine the impact of the energy sector on the country's greenhouse gas emissions.Through a system of indicators, we seek to assess both the primary and secondary effects of the GHG emissions.The methods used to conduct the study are:

- System analysis (analysis of the object represented as a system). The main objectives of its implementation, in this case, are to derive and justify the main trends in the development of the phenomena and processes under study [Borisov and Behluli, 2020];

- Situational analysis. Its application will be used to characterize the state of the enterprises, industries and regions under study at a certain time or for a certain period. Depending on the needs of management, a system of indicators will be used to characterize the state of the energy sector in terms of employment and its changes in the event of restructuring of the sector [Borisov and Radev, 2020];

- Benchmarking. This will be used to draw certain conclusions about the position of the national sector in relation to that of the EU. For this purpose, comparative assessments of the main parameters of the sector are made [Borisov and Miladinoski, 2022];

- Diagnostic analysis. It is used to examine in depth the conditions and factors that have led to the observed state of the sector [Borisov, Qerimi and Behluli, 2020].

**RESULTS AND DISCUSSION**

The main sources of information used are the World Bank's fact sheets on the development of the energy sector in the countries and Bulgaria in particular; the Strategy of the Republic of Bulgaria for the Promotion of Employment for the period 2020-2030; the Strategy for Sustainable Energy Development of the Republic of Bulgaria; statistical yearbooks of the National Statistical Institute of the Republic of Bulgaria; reports and expertise of NGOs, as well as scientific publications of researchers on the issue.

Bulgaria's energy sector plays an important role in the country's economic development. As part of the Eastern socialist bloc in the last century, Bulgaria developed a highly electricity-dependent industry. The main energy resources were imported from the Russian Federation in the 1990s. During this period,

the country developed heavy industry, which was highly energy dependent. After 1990, there was a change in the political and economic regime in the country, which led to processes of restructuring of the economy. Heavy industry declined, which had an impact on energy consumption. As can be seen from the graph, within 10 years as a result of economic restructuring, greenhouse gas emissions plummeted by 30%. Highly polluting heavy industries are phasing out and investment is being restructured into less energy-intensive sectors such as agriculture, tourism and trade. Economic restructuring processes tapered off by mid-2006. In 2008, Bulgaria became a full member of the EU, giving it the opportunity to modernise its energy sector and invest in alternative energy sources that are clean and renewable. During the period 2008-2015, the country created renewable energy generation capacity through EU funds. This is the main factor contributing to the reduction of greenhouse gases during this period. As can be seen in the graph, at the end of 2019 greenhouse gas emissions have decreased by 45% compared to those recorded in 1990.

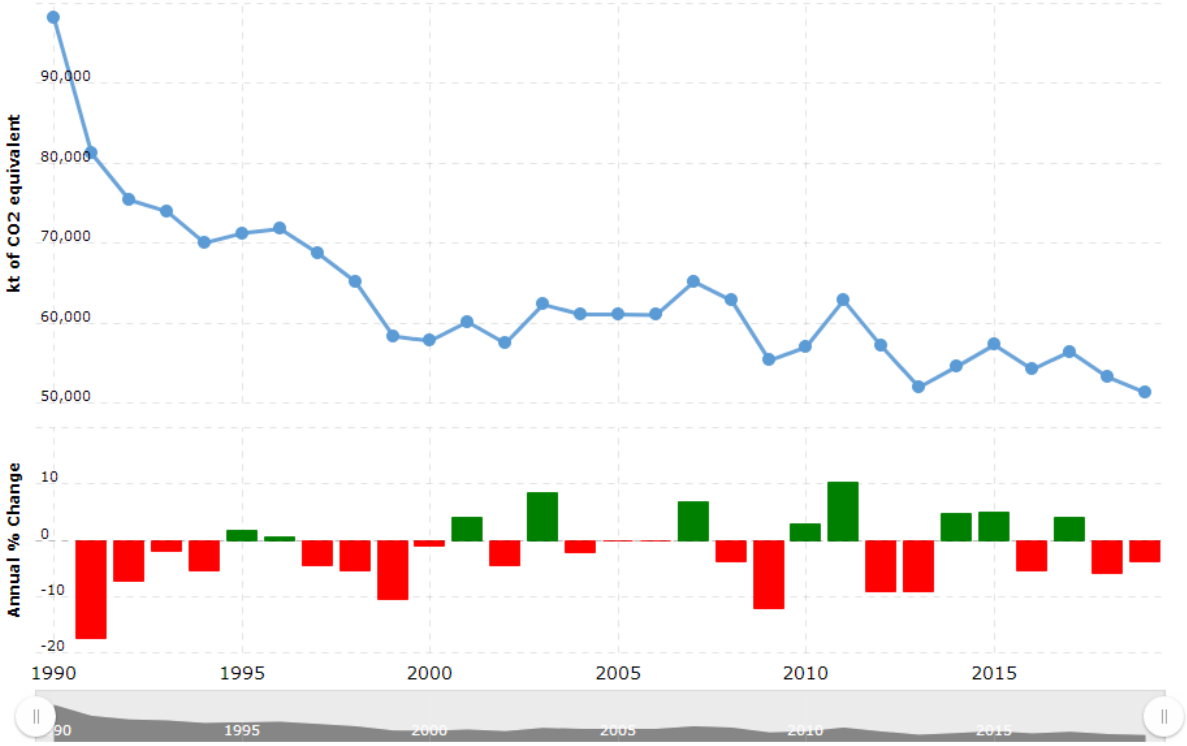


Figure 1. Bulgaria Greenhouse Gas (GHG) Emissions 1990-2023. Source: World Bank: https://www.macrotrends.net/countries/BGR/bulgaria/ghg-greenhouse-gas-emissions

**Compared to neighbouring countries such as Greece, which joined the EU long before Bulgaria, Bulgaria performs better in reducing greenhouse gas emissions**. In Greece, there was a peak in greenhouse gas emissions, which took place between 2005 and 2008. Between 2008 and 2015, emissions started to decline sharply and reached levels similar to Bulgaria. In just 5 years, greenhouse gas emissions fell by almost 38%. The data shows that Bulgaria and Greece, as full EU members, have managed to significantly reduce their greenhouse gas emissions. In contrast, the greenhouse gas emissions of the Cypriot economy increased progressively over the period studied. Emissions increased by 80% between 1990 and 2008. Compared to Bulgaria and Greece, Cyprus has a smaller economy, which determines the relatively lower levels of GHG emissions into the atmosphere.

**Compared to the EU, GHG emissions from the Bulgarian economy are decreasing in line with the EU. The main sources of GHG emissions remain the energy sector - the main emitters are coal-fired power plants**, another sector that emits high levels of GHG in the Bulgarian economy is agriculture.

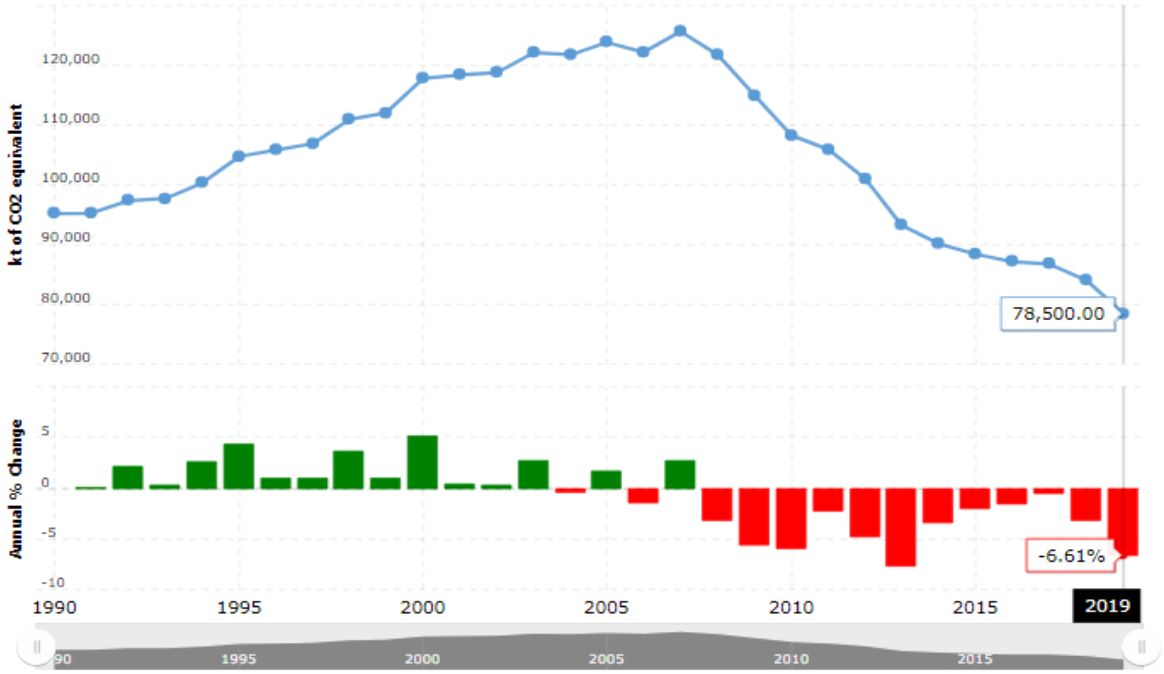


Figure 2. Greece Greenhouse Gas (GHG) Emissions 1990-2023. Source: World Bank: https://www.macrotrends.net/countries/BGR/greece/ghg-greenhouse-gas-emissions

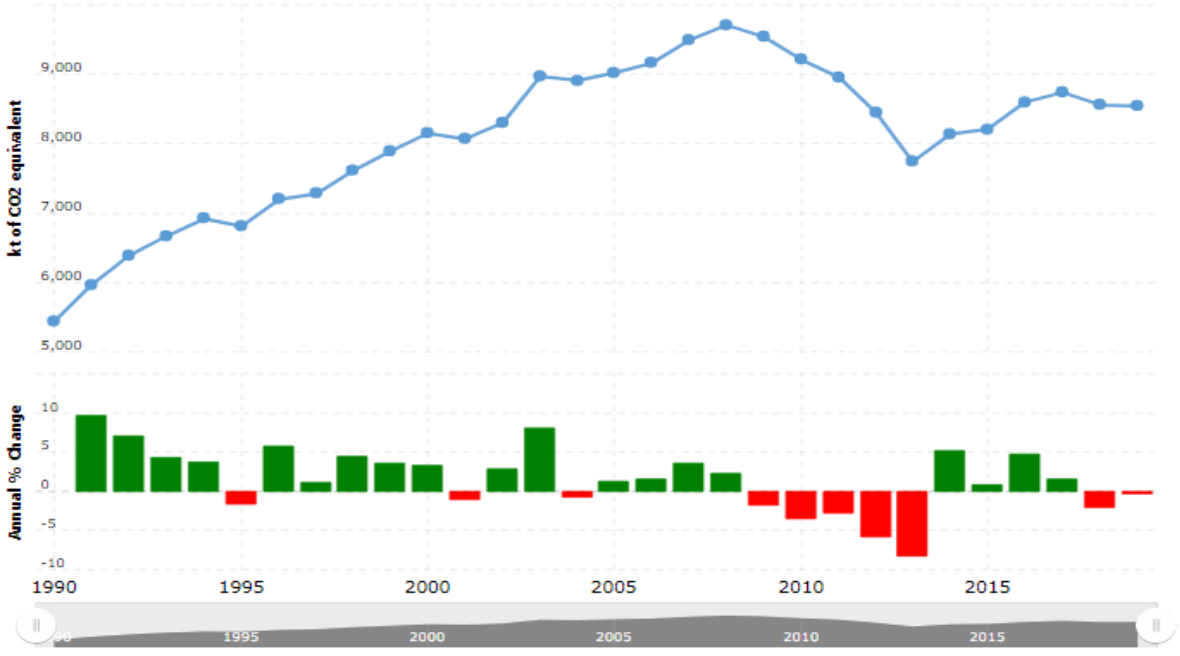


Figure 3. Cyprus Greenhouse Gas (GHG) Emissions 1990-2023. Source: World Bank: https://www.macrotrends.net/countries/BGR/cyprus/ghg-greenhouse-gas-emissions

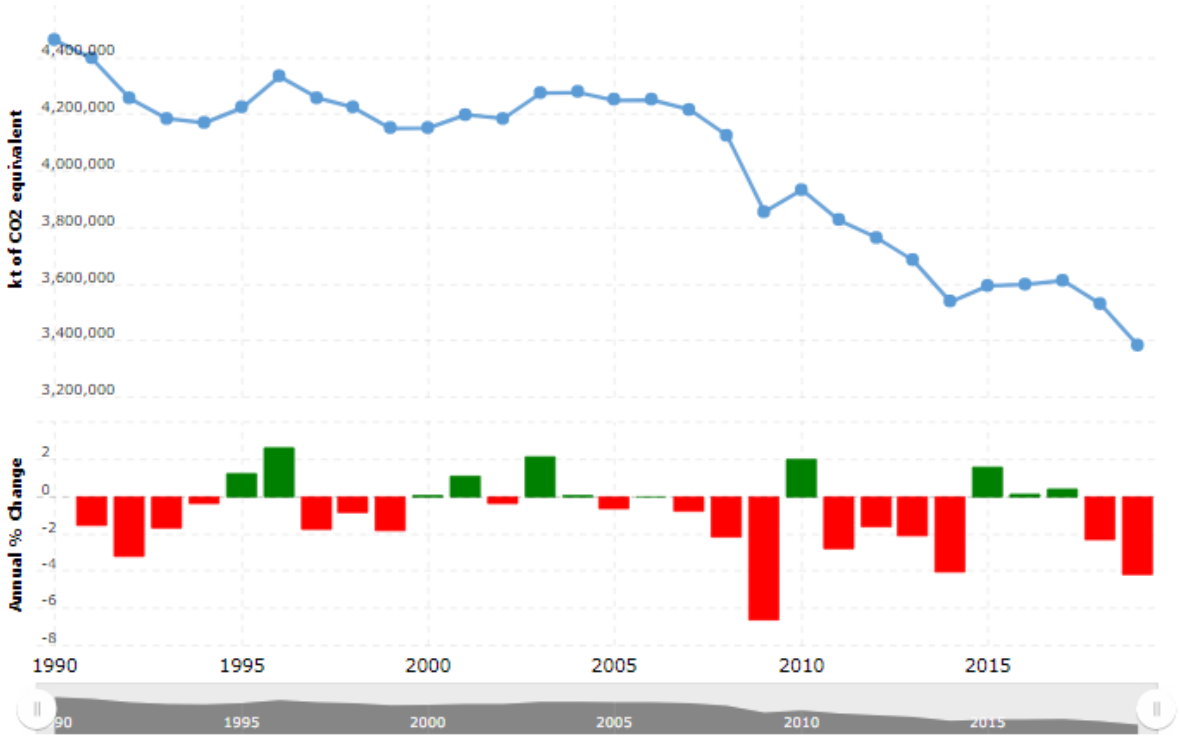


Figure 4. EU Greenhouse Gas (GHG) Emissions 1990-2023. Source: World Bank: https://www.macrotrends.net/countries/EUU/european-union/ghg-greenhouse-gas-emissions

***A comparison of the National fossil fuel power production with the European countries.*** Bulgaria's energy sector has undergone significant changes over the last 30 years. The country's energy security is based on the production of electricity from the only nuclear power plant in Bulgaria, situated in town of Kozloduy. **A significant share of the country's electricity production is generated by coal-fired power plants. Under the Green Deal, most of the coal-fired power capacity will be closed, destabilising the country's energy security if there is no clear strategy in place to restructure energy resources**. Evidence shows that energy dependence on coal-fired power plants has been declining for the last 50 years. In 1975, the country met its energy needs mainly from coal and fossil fuels- almost 95% of the total energy consumed in the country. In 1974, the country's only nuclear power plant was built and commissioned in a town of Kozloduy. This is the main factor limiting the use of electricity from coal-fired power plants. Within 5 years of the start-up of the nuclear power plant, a total of 6 reactor units were installed and commissioned, providing a total of 3 760 MW of electricity. Within the period 1980 - 2002, the energy dependence on coal and fossil fuels was sharply reduced and reached the level of - 70% of total electricity consumption (in 2002). During the period 2004 - 2006 the first 4 reactor units built were shut down and taken out of power as a condition for the country's accession to the EU. This contributed to the sharp increase in the country's energy dependence on the coal and fossil fuel industry again. In the period 2004-2010, the consumption of electricity from coal-fired power plants increased and reached 77% of the total energy consumed from this type of energy carriers in the Bulgarian economy. Today the country provides 76% of its thermal energy needs from coal and fossil fuels. Compared to the EU, a downward trend in electricity consumption from coal-fired power plants is observed. In 2015, the EU managed to reach a

limitation of its energy dependence on coal, with 72% of its electricity consumption from such energy raw materials.

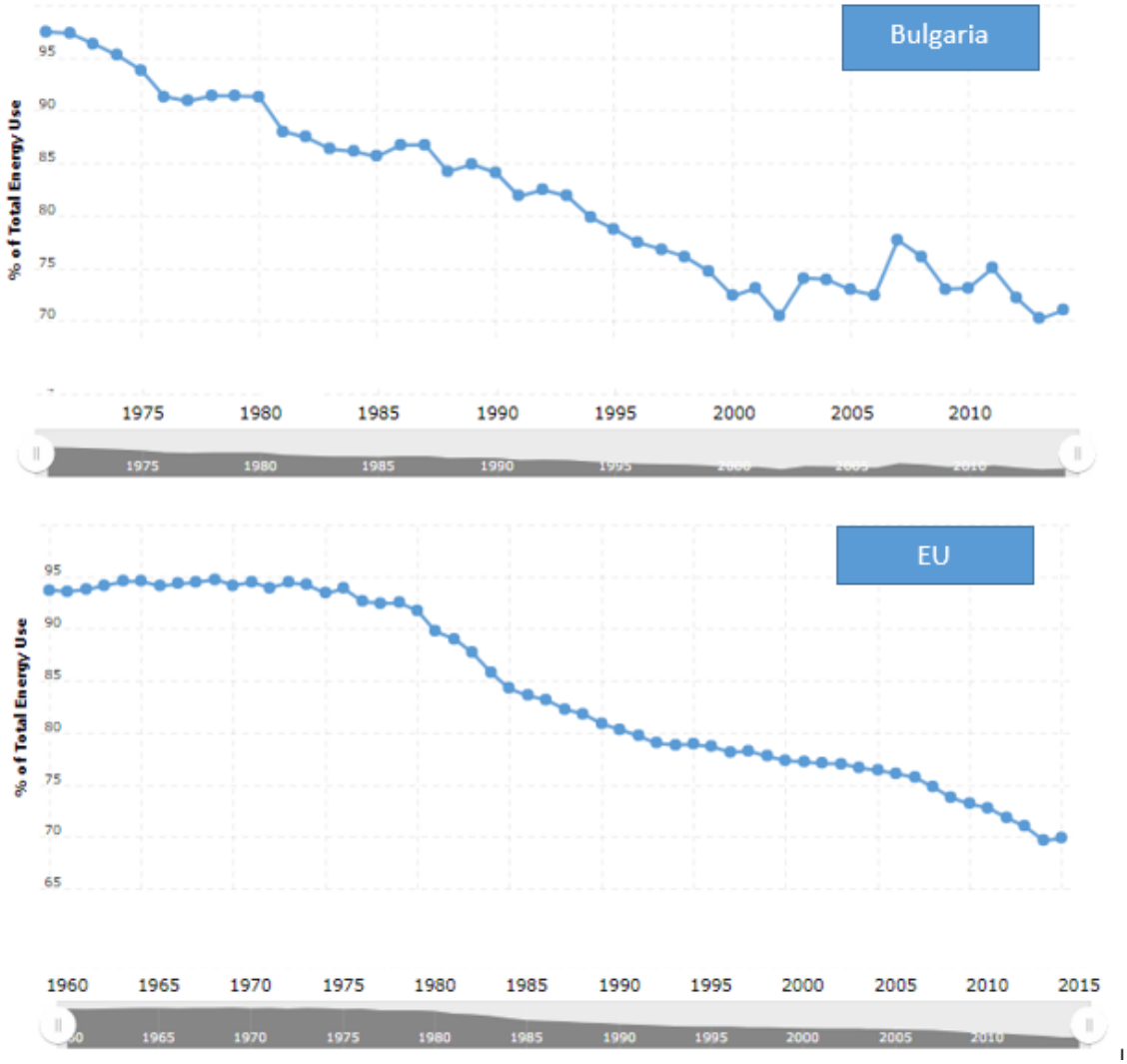


Figure 5. Coil and Fossil Fuel Consumption (presented as share of Total Energy Use) a comparison between Bulgaria and EU. Source: World Bank 1960 – 2015

**Today, the Bulgarian economy relies mainly on 3 energy productions - electricity production from nuclear power plants - 37%, 39% of electricity production is provided by thermal power plants and 13% of electricity production is provided by power plants using renewable energy resources**. In recent years, Bulgaria has invested heavily in the creation and development of production capacities based on the use of renewable energy sources. This investment interest is driven by the EU regulatory framework and the Bulgarian state, which seeks to encourage investment in this direction of development of the Bulgarian energy sector. In the period 1990 - 2000, the country's electricity production from renewable energy sources had a symbolic character, the data show that during these years only 4% of the energy production was based on the use of renewable energy sources. Thanks to the pre-accession funds, in the

period 2005-2008, electricityproduction from renewable sources reached 10% of the total electricity produced in the country.

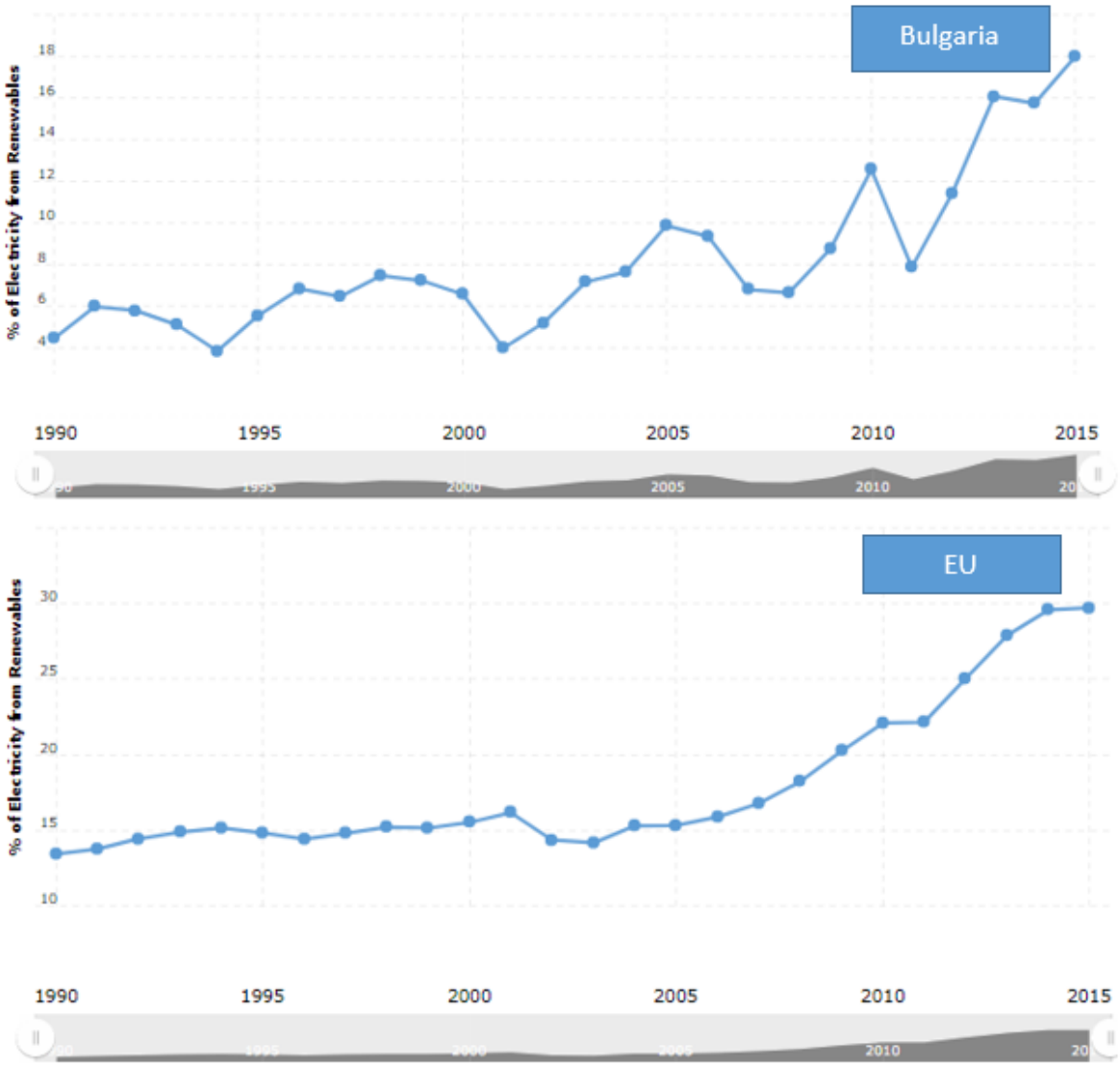


Figure 6. Electricity from Renewables (presented as share of Total Energy production) a comparison between Bulgaria and EU. Source: World Bank 1960 – 2015

In 2008 Bulgaria became a full member of the EU and has full access to EU funding. This factor gave a positive boost to the production of electricity from renewable sources and in just 5 years numerous power plants were built, mostly producing electricity from solar panels. In 2015, the production of electricity from renewable sources peaked at 18% of the total electricity produced.

As can be seen from the data in the graph, the development trend of the renewable energy sector in Bulgaria follows that of the EU. In 2015, electricity production from renewable sources in the EU reached 30% of total electricity produced. In Bulgaria, this figure is 18%.

***National dependence on any energy sources.*** In fulfillment of the goals set in the Energy Strategy of the Republic of Bulgaria until 2020 and in connection with the country's commitments arising from its

membership in the EU, in 2012 amendments and additions to the Energy Act (EA) were adopted, which Directive 2009/72/EC on the electricity market was transposed. With this legislative act and with the adoption of the by-laws, conditions were created for the development of the electric power industry sector and its market liberalization, according to the requirements laid down in the Third Energy Liberalization Legislative Package of the EU. From January 2, 2020, a short-term and long-term segment of the trading platform was launched, as well as a brokerage service allowing the registration of contracts between a trader and an end customer. The short-term segment includes products for the segments: "day ahead", "on the day" and "weekend (Saturday and Sunday)". In the long-term segment, products are traded for a week (Monday to Monday), a calendar month, a calendar quarter and a calendar year. In addition, the long-term segment also provides an opportunity to conclude and register non-anonymous transactions with a view to expanding the range of customer services. There are 34 registered participants in the short-term and long-term segments of the gas exchange. In synergy with the physical infrastructure of the gas distribution center, the necessary rerequisites are provided for the creation of the first liquid physical and commercial gas hub in the region of Southeast Europe, based in Bulgaria. As the first stage of the exchange's activity, "Gas Hub Balkan" EAD provided the participants in the natural gas market in Bulgaria and the region with the opportunity to use a trading platform with all the necessary functionalities, in accordance with the requirements of Art. 10 of Regulation (EU) No. 312/2014 on the creation of a network code for gas balancing of transmission networks, the technical and software environment for the implementation of the program for the release of quantities of natural gas from the public supplier for the development of the free market, as well as medium-term and long-term segment for physical delivery transactions.

***Nuclear energetics.*** Nuclear power plays an important role in ensuring national, regional and European energy security, while providing affordable energy and a key element in the transition to a low-carbon economy. In 2019, the share of nuclear energy in the structure of the produced electrical energy by types of energy carriers in the country was 37%. An important element related to the country's energy security is the successful implementation of the project to extend the operational resource of units 5 and 6 of the Kozloduy NPP for another 30 years. In accordance with national legislation, in 2017 and in 2019, the Nuclear Regulatory Agency (NRA) extended the operating licenses of units 5 and 6 for a new ten-year period. Due to its scale, the work on the project for the extension of the service life was calculated in two main stages:

- In the first stage, common to both units, a comprehensive survey and assessment of the residual resource of the equipment and facilities of units 5 and 6 of the Kozloduy NPP was carried out. The results of the complex inspection showed that the technical condition of the structures, systems and components of units 5 and 6 corresponds to the requirements of the normative, design and construction and operational documents in force at the Kozloduy NPP;
- During the second stage, the programs for preparation for long-term operation were implemented, which included specific measures determined as a result of the comprehensive survey.

Another important element, of particular importance for the country's energy security, is the successful implementation of the project to increase the installed electric power of each of the units of

the Kozloduy NPP to 104% Nnom, i.e. from 1,000 MW to 1,040 MW. This was achieved by increasing the thermal output of each unit from 3,000 MW to 3,120 MW.

***Renewable energy sources*.** Another local energy resource available to the country is energy from renewable sources (hydro, wind, solar, geothermal and biomass energy). The share of renewable energy in primary energy production in 2018 was 21.52% (according to NSI data). In 2012, Bulgaria achieved the mandatory national target of a 16% share of renewable energy in the country's gross final energy consumption for 2020. In the following years, the achieved share of renewable energy in the gross final energy consumption continued to exceed the 2020 national target, with the main contribution to this being the increase in the use of renewable energy in the heating and cooling sector. In the electrical energy sector, a higher share of energy from renewable energy sources in the gross final consumption of electrical energy than specified in the National Action Plan for energy from renewable sources has been achieved. The use of renewable energy in the transport sector has increased rapidly, and in the period 2013-2015 the achieved values for the share of renewable energy exceeded those set in the National Action Plan for energy from renewable sources. After 2015, the changes made in the European legislation, related to the introduction of restrictions on the accounting of conventional biofuels for the purpose in the transport sector, led to a delay in the increase in the consumption of renewable energy.

**Electricity production.** The Republic of Bulgaria has a diverse electricity production mix. The structure of electricity production is dominated by thermal power plants using coal, followed by the Kozloduy NPP nuclear power plant. The percentage distribution by plant types is shown in the following figure.

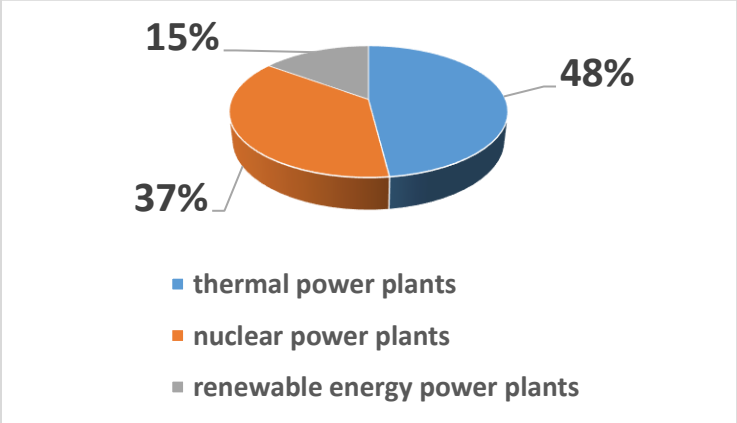


Figure 7. Electricity production - The percentage distribution by plant types. Source: Constant fuel-energy balance for 2019, ME

The electricity production capacities ensure the consumption in the country and enable the export of electrical energy. At present, the net installed power generation capacity in the EEC is 12,400 MW and the available capacity is 8,300 MW. The basic power generation capacities in the country are Kozloduy NPP EAD and coal-fired condensing power plants. The responsibility for covering the changes in the load in a 24-hour and seasonal section is assigned to the large hydroelectric and pumped-storage plants. The total installed capacity of "NPP Kozloduy" EAD is 2,080 MW, which annually provides more than a third of electricity production in the country. In 2019, the nuclear plant produced 37% of gross electricity production. The total installed capacity of the thermal power plants ("Maritsa East 2 TPP" EAD, "Kontur Global Maritsa East 3" TPP JSC, "EI I EU-3C Maritsa East I" TPP and "Bobov Dol" TPP) using local coal is 3,848 MW. In 2019, these plants produced 39% of the country's gross electricity production. Maritsa East

2 TPP EAD is the largest thermal power plant in Bulgaria with a total installed capacity of 1,610 MW. The main balancing and regulating powersin the EES of Bulgaria are the large hydroelectric plants owned by "National Electric Company" EAD (NEK EAD). NEK EAD is the owner of 30 hydroelectric power plants (HPP and PAVEC) with a total installed capacity of 2,713 MW in turbine mode and 937 MW in pump mode. The main electricity production of the company is obtained from the fourteen large hydroelectric power stations, which have a total installed capacity of 2,480 MW. They are grouped into four cascades "Batak", "Dospat-Vacha", "Arda" and "Belmeken-Sestrimo-Chaira" and are designed to cover the peak loads and regulate the parameters of the EES.

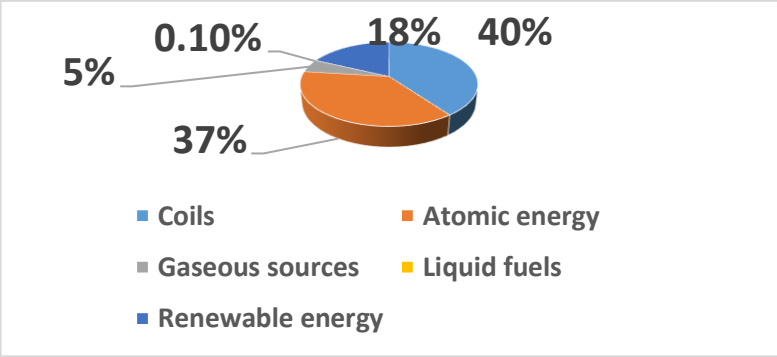


Figure 8. Structure of produced electrical energy by types of energy carriers (2019),%. Source: Constant fuel-energy balance for 2019, ME

In 2019, the gross production of electrical energy amounted to 44 TWh, of which 76.6% was from local coal and nuclear energy (nuclear energy is counted as a local energy carrier), 15.8% - from renewable energy, 6.0% - from imported fuels (imported coal, gaseous and liquid fuels) and 1.6% - from PAVET. This production fully covers the electricity needs in the country (39 TWh gross domestic consumption for 2019) and allows Bulgaria to be a net exporter of electricity. In 2019, commercial exports were 8.8 TWh and imports were 3 TWh.

***Heat supply*.** Centralized heat supply is one of the most efficient ways to supply heat energy and is a significant factor in saving primary energy. Heating companies are the guarantor of quality supply of heat energy to consumers in the country. There are 12 heating companies in the country, 11 of which are privately owned, and "Toplofikatsia Sofia" EAD is 100% owned by the Metropolitan Municipality. Households, administration and business in the largest cities - Sofia, Plovdiv, Varna, Burgas, Ruse, Pleven, Pernik, Vratsa, Sliven, etc., use their services. For the needs of the industry, thermal energy produced by factory thermal power plants (CHP) is used. In a large part of the district heating companies, which 10-15 years ago had only facilities for the production of thermal energy, significant investments were made in the direction of installing gas engines and gas turbine modules for the production of electrical energy. Gas engines were installed or water boilers were replaced at the ZTEC and dozens of greenhouses. In 2019, the thermal energy produced in the country by TPEC and ZTEC was about 14 TWh. In 2019, the gross production of heat energy was 14 TWh, with the largest relative share held by TPEC - 54.0%, followed by TZEC - 45% and NPP - 1%. The final consumption of thermal energy in 2019 amounted to 11 TWh, with the largest share held by non-domestic customers (industrial and commercial) – 64%, followed by household

customers with 31% and non-household (budget) with 5%. The thermal energy **produced by the factory** plants is used for technological needs by the plants themselves and by consumers mainly from industry.

According to Directive (EU) 2018/2002 of the European Parliament and of the Council of 11 December 2018 to amend Directive 2012/27/EU on energy efficiency all meters or heat distributors installed after 25 October 2020 must be remote sensing devices. In this way, the end users of thermal energy will receive information, including and electronically, for the amount of thermal energy actually consumed by them. By January 1, 2027, meters and heat distributors that are already installed but not remotely readable should be retrofitted to be remotely readable or replaced with remotely readable devices.

***Energy connectivity*.** The Bulgarian EEC works in parallel with the EEC of the continental European countries. The connection of our EEC with the united European EEC is carried out through: four intersystem power lines (EP) 400 kV Bulgaria-Romania; two EP 400 kV Bulgaria-Turkey; one EP 400 kV Bulgaria-Serbia; one EP 400 kV Bulgaria - Republic of North Macedonia and one EP 400 kV Bulgaria - Greece. With these interconnections, the transmission capacity for export is 1,950 MW and for import is 1,590 MW, where the electrical interconnection for export is 16.2% and for import is 13.2%. Bulgaria's gas transmission network has the following built and operating interconnections with the networks of the following neighboring countries: two interconnections with Romania ("Negru Voda/Kardam" and "Ruse/Giurgevo"); one link with the Hellenic Republic ("Tower/Siderokastro"); one connection with the Republic of North Macedonia ("Gueshevo/Židilovo") and one connection with Turkey ("Strandja/ Malkochlar"). The main amount of natural gas supplied by the Russian Federation in the country is provided by the Negru Voda/Kardam interconnection until the end of 2019, and from the beginning of 2020 it is provided by the entry point. "Malkochlar/Strandja". On the Bulgarian side, technical possibilities are provided for a permanent physical reverse flow at the interconnection points with Romania and the Republic of Greece, according to Directive 2009/73/EC on the general rules for the natural gas market. The purpose of the capacity in the opposite direction is to contribute to a significant increase in the security of supplies in crisis situations and development of the natural gas market in the country.

**CONCLUSION**

- Compared to neighboring countries such as Greece, which joined the EU long before Bulgaria, Bulgarian state performs better in reducing greenhouse gas emissions;
- Compared to the EU, GHG emissions from the Bulgarian economy are decreasing in line with the EU. The main sources of GHG emissions remain the energy sector - the main emitters are coal-fired power plants;
- A significant share of the country's electricity production is generated by coal-fired power plants. Under the Green Deal, most of the coal-fired power capacity will be closed, destabilizing the country's energy security if there is no clear strategy in place to restructure energy resources.
- Today, the Bulgarian economy relies mainly on 3 energy productions - electricity production from nuclear power plants - 37%, 39% of electricity production is provided by thermal power plants and 13% of electricity production is provided by power plants using renewable energy resources.

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# PECULIARITIES OF PREPARATION FOR ADMINISTRATIVE WORK AMONG REGIONAL DEVELOPMENT TRAINEES IN THE REPUBLIC OF BULGARIA

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**ABSTRACT**

This article is devoted to an important issue related to the preparation of young regional development specialists for administrative work. The affiliation of the specialty "Regional Development" to the professional field of "Administration and Management" to the opportunity to focus education on the opportunities of trainees to acquire newer and more competent knowledge and skills in the field of organization and management. This focus of training is directed towards public sector skills and private business organisation and management teachings. The article discusses the author's discussion issues and views on the problems of formation of qualities and skills of future professionals in the field of regional development based on the changed conjunctural environment and new pattern of global integration and processes of regionalization of the world. A pioneering model of formation of work qualities and skills is outlined, which is also largely a matter of discussion and further modeling.

**KEYWORDS:** labor, regional, management, organizing, development, administration

**ABSTRAKT**

Dieser Artikel befasst sich mit einem wichtigen Thema im Zusammenhang mit der Vorbereitung junger Fachleute für Regionalentwicklung auf die Verwaltungstätigkeit. Die Angliederung des Fachgebiets "Regionalentwicklung" an das Berufsfeld "Verwaltung und Management" bietet die Möglichkeit, die Ausbildung auf die Möglichkeiten der Auszubildenden zu konzentrieren, neue und kompetentere Kenntnisse und Fähigkeiten im Bereich Organisation und Management zu erwerben. Dieser Schwerpunkt der Ausbildung ist auf die Fähigkeiten des öffentlichen Sektors und die Lehren der Organisation und des Managements in der Privatwirtschaft ausgerichtet. Der Artikel erörtert die Diskussionspunkte und Ansichten des Autors zu den Problemen der Ausbildung von Qualitäten und Fähigkeiten zukünftiger Fachleute im Bereich der regionalen Entwicklung auf der Grundlage der veränderten Umwelt und neuer Muster der globalen Integration und der Regionalisierungsprozesse der Welt. Es wird ein bahnbrechendes Modell für die Ausbildung von Arbeitsqualitäten und -kompetenzen skizziert, das auch weitgehend Gegenstand von Diskussionen und weiteren Modellierungen ist.

**STICHWORTE:** Arbeit, regional, Management, Organisation, Entwicklung, Verwaltung

**RÉSUMÉ**

Cet article est consacré à une question importante liée à la préparation des jeunes spécialistes du développement régional au travail administratif. Le rattachement de la spécialité "Développement régional" au domaine professionnel "Administration et gestion" permet d'axer l'enseignement sur les possibilités offertes aux stagiaires d'acquérir des connaissances et des compétences nouvelles et plus approfondies dans le domaine de l'organisation et de la gestion. Cette formation est axée sur les compétences du secteur public et sur les enseignements en matière d'organisation et de gestion des entreprises privées. L'article aborde les questions et les points de vue de l'auteur sur les problèmes de la

formation des qualités et des compétences des futurs professionnels dans le domaine du développement régional sur la base de l'environnement modifié et des nouveaux modèles d'intégration globale et des processus de régionalisation du monde. Un modèle pionnier de formation des qualités et des compétences professionnelles est esquissé, qui est aussi largement un sujet de discussion et de modélisation.

**MOTS-CLÉS:** travail, région, gestion, organisation, développement, administration

**INTRODUCTION**

This article is conditioned by the fact that issues related to work readiness and, in particular, work in the field of regional development management are central to the process of acquiring a profession and the initial stages of adapting to it. All researchers have shown that the presence of work readiness predetermines a useful, pleasant and trouble-free involvement in a specific type of work. In this direction, the most appropriate work organisation in a company or institution to foster creativity and innovation within it is a combination of individual work and teamwork. In the field of regional development, due to the novelty of scientific knowledge in it, it is necessary to introduce additional methodology of management processes. This requires that in managing regional development, it should be well thought out, methods should be imposed according to the competencies of the types of teams, such as project team, parallel team or informal team, could coexist peacefully together with individual work organization. Work readiness, in the field of regional business and regional development, as well as the administration of public sector organizations, as an integral, complex manifestation, the basis of professional self-definition and a condition for successful initial adaptation, is formed, strengthened, modified in the university training [Andreev, 2012]. Mental dimensions of readiness for administrative work are dynamic and changeable, enriched and confirmed in the preparation for professional work, which is conditioned already from the entrance to the university of young specialists in regional development. In all these companies, there is just such an organisation of work, in which individual work is combined with active teamwork. To make things happen in these companies, various changes are being made in management practices, in this direction and in the direction of human resource management practices. Changes are being made in job design, in selection, in appraisal, in rewarding employees, etc [Benev, 2002].

In the analysis of the various publications on work readiness, we can differentiate the following problems: - Unspecified or even missing initial concept of the profession of the specialist in the field of regional development management, its structure and functional characteristics. This in practice begins with the study of individual components of the readiness propensity for organizational and managerial activity [Brown and Jackson, 1998]. In practice, however, due to the specificity and scope of regional development management, it is not possible at this stage a sufficiently in-depth and systematic study on the dynamics of this readiness for work of regional development specialists. This is due to the lack of sufficient research data over a period of more than 10 years. In practice, the current data is based, primarily, on observations and positive or negative personal experiences. It is logical that extremely limited in number and subject matter, studies of work readiness in regional development management have been concretised in university students. Where they are trained in the specialty of Regional Development, Regional Business and Management and other related general professional activities. This also predetermines qualitatively new aspects and characteristics, which has not been taken into account.

These problems point out the importance of the research topic and the need to study it in a research way, with modern and reliable scientific tools [Gardner, 2004]. The data obtained should be relatively complete and cover the overall mental readiness of the individual to be realized in the field of regional development management.

**METHODOLOGY FOR IDENTIFYING LABOUR DEMAND IN REGIONAL DEVELOPMENT**

The methodology of the present theoretical-empirical study is directly related to the choice of the methods of the specific scientific search. The starting point of the methodology is educational practice. This means an assessment and analysis of the state of the contemporary Bulgarian higher education. This evaluation should simultaneously have an observation on individual organization of work of future young specialists of regional development. Individual work means that each employee in accordance with his position has to perform different tasks. These are either permanent (as is usually the case in practice) or extraordinary tasks. In the field of regional development, in view of the times in which it is sought to promote innovation as a profession, the organisation of individual work, especially for those employees who have a flair for or an attitude towards innovation, should be slightly modified [Druzhilov, 2005]. This has already been mentioned in "How to promote creativity in the company". This has motivated changes in regional development training in terms of the professional competences of regional development specialists, as well as the formation of a way of individual assessments and in the way of evaluating the acquired competences in terms of their readiness for a career in the regional economy [Ilieva, 2006]. This means acquiring competences to build a field of trust on the part of their trainees, who can take on tasks (or just one task), understand their nature and be able to evaluate what final results to expect from the performance of the new tasks (the new task). In the new post-Kovid-19 realities, training must also embed a more flexible mechanism for training young people with the possibility of flexible working hours. Provide in the appraisal and reward system indicators by which you will judge that the performance of the respective task is progressing. In case of failure, do not automatically deduct from the reward [Ilieva, 2006]. As can be seen, assigning an individual task in relation to innovation means an individual approach to the employees involved in the creative process. These arrangements we have to make are also related to the application of the specific research, first of all to make a logical analysis of the concepts of work readiness, in general. They are fundamental prerequisites in our research activity, aimed at the organization and dynamics of work readiness in administration, realized in the training, education and upbringing of students at the UNWE. The methodology used by us includes a number of research methods, through which it is possible to obtain objectively correct and sufficiently reliable results. These, subjected to a thorough and comprehensive analysis, allow us to seek proof of the hypothesis put forward, the stated aim and the stated objectives of the present study. The methods of social-historical research are also used in the development: comparative, problem-chronological, retrospective, institutional. Methodological principles are applied: historicism, objectivity, reliability and comprehensiveness in studying the phenomena "readiness for work" and "readiness for administrative work" [Karageorgieva, 2013]. For greater clarity, the textual material is accompanied by graphical representations-tables, charts, diagrams and graphs-through which conditions are created for perceiving the dynamics in the process of preparation for administrative work. In practice, the problem is new for the researched field, since, in our opinion, the parameters of the educational service aimed at the preparation of personnel for regional development and regional economy in the XXI century in the countries of the European Union and

Bulgaria, respectively, have not yet been clarified. The experience of the Republic of Bulgaria in the field of training of personnel for the higher and territorial administration, regional business, as well as for the administration of public sector organizations, through formal and non-formal training and education, is very modest. Most of the cadres for regional development and the creation of organization and management of economic actors in the local economy are the result of the specificity of non-formal training, which covers all sectors of economic activity and takes place in different geographical, temporal and social contexts [Manliev,1998]. On the other hand, in the early 1990s there were attempts through the non-governmental sector to create conditions for non-formal learning that were based on the application of the concept of lifelong learning. This process is incomplete and, in practice, no comprehensive mechanism has been found to coordinate efforts in establishing sufficiently authoritative vocational training centres, especially in the regional and local context. This predetermines a serious attention and attitude, both in theory and in practice of universities and structures of regional development, to outline the need to create and consolidate an institutional framework that uses the finished educational product in the field of administrative activity and training of future professionals in administrative work or to create attitudes in workers for the adoption of the imposed management approach [Milkov, 2011]. Thus, we assume that management can be defined as a type of human activity aimed at the effective functioning of the organization in order to achieve its goals. In the training of personnel for regional development, it is necessary, in our view, to make extensive use of research in the management process, since it is in the regional economy and regional business that all elements of management processes are to be implemented, both at the national and local levels [Milkov, 2011].

**RESULTS AND DISCUSSION**

***Administrative and organisational work in regional development.*** Science, from the positions of theory and the analysis of practical activity, exists precisely for this- to make sense of human existence; to help the individual in cases of hesitation and difficulty in choosing a university, a specialty, a profession and a place for the realization of labor and professional opportunities; to determine the methods, ways and means of overcoming conflicts in the process of preparing students for administrative and organizational activity, to predict and forecast the ways of improving the professionalism of the specialist in refrom this position, the study of readiness for work in the conditions of regional development and the processes of initial adaptation to it is, in a higher degree, the duty of social sciences [Milkov, 2016]. This makes it necessary to bring to the fore the philosophy of management, organizational psychology, the process of regional development, the theory of administrative culture, public management, administrative ethics and business relations in economically active persons. In this way, millions of citizens of the country and thousands of organizations have their encounter- desired or not- in the economically active and the existing public sector [Milkov, 2020]. All of them want and hope that their problems and issues will be solved as quickly as possible, fairly, without waiting for a long time, without corrupt practice or intercession. All in all, an interesting triangle of society-public sector-efficiency is created, where efficiency is personified by the visibility of our surroundings and the spatial development of the territory concerned. In addition, a country like Bulgaria is faced with the need to form a model of vertical governance that must be tailored to the territorial specificities and spatial development objectives of the national territory. This is in line with Bulgaria's admission as a full member of NATO and the EU and its participation in many international institutions - the UN, places before the state and regional authorities

new, very serious requirements in terms of administrative services to citizens and organizations [Milkov, 2015]. The increased moral, ethical and aesthetic culture of regional development management is a guarantee for the qualitative and efficient performance of their professional duties. The common globalization processes affecting the world and Europe do not pass the Republic of Bulgaria - our citizens enjoy cultural services from different structures of administration abroad and have the opportunity not only to compare but also to demand the same at home. Many Bulgarian private and public institutions work with representatives of other countries, from the United Europe and beyond (investors, entrepreneurs, managers, coaches, athletes, students, owners of organizations - banks, companies, manufacturing enterprises, stock exchanges). In this way, the positive foreign administrative experience from countries with a developed civil society is brought to our country. Here is the place to outline the contours of the foundation of regional development, which is linked to the demographic potential of the territory concerned. It is linked to the optimal functioning of the public sector in the following areas: culture, education, health, and social security and assistance [Milkova and Milkov, 2007]. In this respect, regional development as a superstructure of this process has resulted in a relatively low level of quality of services in these areas. For example, the quality of social services, measured by the indicator "satisfaction" of users and their families have persistently low levels- 75% of people with disabilities consider that they are not perceived as equal by others, 85.7% rate public transport as inaccessible, 77% cannot visit cultural centres [Penkova, Ev. et al. 2019]. . Thus, the massive changes in the traditional way of life in Bulgaria and the penetration of European values require from the citizens of the country a better understanding of others and of the world as a whole, mutual understanding, peaceful exchange and true harmony- precisely, the things that are most lacking in the modern world. On the one hand, practice gives rise to science, just as every social or natural phenomenon has been the subject of study and research by people over the centuries. On the other hand, science describes and tries to explain practice in order to make it more effective [Milkova and Milkov, 2007]. Here, in our view, is the place to realize the possibilities of the new theory of humanistic education and a new style of exercising the right to work and modeling territorial reality. To learn to live together, developing an understanding of others and of their histories, traditions and spiritual values, and creating on this basis a new spirituality, imbued with the recognition of our growing interdependence and a complex analysis of the risks and challenges of the future, a spirituality that would stimulate people to work on common projects and to resolve the inevitable conflicts in a reasonable and peaceful way [Penkova, Ev. et al. 2019]. On the other hand, as the object of governance are the people managing the organization. But they are also subjects. It is more correct to speak of subject-subject relations in management. In addition, we can emphasize that there are different schools of management, but for us the behavioral approach, which emerged as a paradigm in the 1950s, is important. Behaviorist views are mainly visible in the works of Chris Argyris, Francis Laycard and Douglas McGregor. They focus their attention on the motivation of employees in the organization, the nature of power and authority in the organization, the phenomenon of leadership, organizational structure and communication in the organization. Special attention is paid to interpersonal relationships in the organization and in this sense it is a step forward compared to the previous school. The basic view is that labour productivity can be enhanced by increasing the effectiveness of the human factor. Later on, William Eisard was accepted as the father of regional economics, which in fact built on the behavioural approach in the management of territorial processes and in fact conceptualised the modern world in the 21st

century, which we can safely assume as the "Century of Regions". This new global spatial structure of the world is linked to the concentration of the global economy in 10-12 regional economic centres, which are home to ¾ of the world's population and produce more than 80% of the world's Gross Domestic Product. As sciences of personality, mental processes, properties and states and the processes of learning, education, upbringing, development, choice of profession and preparation for it, they play a leading role in the professional and creative growth of the individual [Penkova, Ev. et al. 2019]. The knowledge acquired in the psychology of professional culture and communication, organizational psychology and psychology of management is a guarantee that rationalists will apply in their professional activity only those forms of interpersonal communication that ensure the absence of tension, conflict situations, conflicts between themselves, citizens and organizations seeking administrative assistance, advice or service. **Thus, the profession of regionalists in the XXI century has a new peculiar social institute. It is a specific self-organizing profession in the sphere of management and administration as an organizational factor in the social system, providing accumulation, generalization, systematization and transmission of professional experience and functional role in social development.** This summarized and objectified (in the form of instructions, rules, algorithms of activity, etc.) professional experience manifests itself, on the one hand, as a potential for the development of the professional community as a whole, and on the other hand, serves as a basis for the individual-professional potential of its members, who understand the need for the regional development specialist to be as a linking element in the relations between society and the state in the local and territorial aspect [Penkova, Ev. et al. 2019].

***The professional capabilities of the regional development specialist.*** Employers in the world's most developed countries are increasingly looking for professionals with more than one occupation. However, this is a very difficult process of restructuring higher education towards hybrid specialisations. In practice, regional development specialists combine knowledge and skills in earth sciences, economics, information technology and administration and management. This means, however, that these competences must be sufficiently well mastered for him to be able to apply them in practice. Along these lines, senior managers accept that a successful career will require not only a sound education but also the mastery of a range of soft skills. Something that many students have already understood and in one form or another are doing. Another factor for success in the new professions will be combining a reputable university education with specialisation in some of the emerging areas of business. A number of professions allow individuals to more broadly develop their potential intellectual and creative capacities and to realise their full potential [Milkov, 2011]. Of this group are the so-called liberal professions. Their psychological demands are great, since the individual in them is an artist, inventor, rationalizer, creator of new ideas, innovator. In them, of particular importance for the personality and its realization in the chosen profession, are the degrees of development of the intellect, the coefficient of intelligence, non-standard, creative, imaginative thinking and imagination, high and qualitative education. Unfortunately, however, there are professions that unilaterally develop and limit the expressions of the personality, the person becomes an appendage of the machine, technique and technology- specific skills and habits are developed, and everything else, of the deep personal nature, remains undeveloped. Therefore, people in such professions seek other opportunities for expression- through hobbies and interests, changing professions, choosing a new one that satisfies their expectations and preferences(8). Vocational guidance

is a system of vocational orientation, counselling and selection measures that help individuals to choose a profession that matches the needs of society and their personal abilities and characteristics.

As a goal and result of professionalization, is the development of the professionalism of the individual. In the concept of "professionalism" is reflected, to such an extent, the mastery, on the part of the individual, of the mental structure of professional activity, which corresponds to the existing in society standards and objective requirements. Professionalism is an integral characteristic of the professional, manifested in his activity and in his communication with colleagues, subordinates and superiors [Milkov, 2011]. It is not only the achievement of high production indicators, but also a feature of professional motivation, the system of goals, value orientations, awareness of the meaning of work, i.e., of all that constitutes and builds the professional self-awareness of the working person. Professional self-awareness is built from the individual's perception of himself as a member of a particular professional community, which is the bearer of a specific professional culture, including certain professional norms, rules, traditions, customs inherent in a given professional community. Since professionalism is a phenomenon, as a natural consequence there are also questions related to the underlying processes and mechanisms(9). As such a mechanism is the mastering by future professionals in the field of public administration, in the process of their academic training, of the model of administrative work activity and, alongside this, the formation in them of professional self-awareness. It is obligatory, in our opinion, when designing and adopting the academic disciplines, developing the educational-methodical complexes and the curriculum of the specialty "Regional Development", to create such a model of training that provides students with the opportunity to internalize the goals and objectives set in the academic documentation. Thus, in the process of professionalization, initially, the individual, subjective and personal properties of the person must be developed and adapted to the content-subject and process-technological side of the profession(8). For this, the learners must be built the conceptual model of professional activity, providing practical solution of many professional tasks in the field of regional development. This directly corresponds to the fact that the trained personnel have a higher degree of employability. Suitability also means acquired complex, integral personal qualities. Often we take the application of the qualities as a vocation for a particular work activity, but in our opinion, vocation is rather a kind of orientation of the human personality towards a certain type of work. The criterion of vocation is the steady preservation of the inclination to a given activity in the process of its realization, and the indicator of vocation is the active striving to use one's own activity for the realization through the purposes of self-education of the qualities, properties, skills, abilities, attitudes, and orientation desired by the personality. The structure of professional vocation includes the inclination of the personality as a strictly selective orientation to a certain professional activity, aspiration and need to engage in it, attraction as a state of feelings and will, which amplifies the activity and purposefulness to the profession of the regionalist. Fitness for work is highly influenced by the culture of work. The relationship between work and culture has its aspects. During the period of totalitarian rule of our country, this relationship was understood as a driving force for the formation of a socialist attitude towards labour activity. Today, in the conditions of new social and economic relations, market economy and market competition, it is necessary to rethink the concept [Milkov, 2015]. This is so because with the advent of new technologies, labour is becoming, to a greater extent, from physical to intellectual, therefore material production requires from the producer a higher intellectual level, more knowledge in the field of spiritual culture, the spheres of which are science,

directly influencing labour activity, and art, as a conductor of ideas, values, moral principles, without which there can be no culture of labour. The culture of work is that which determines human behaviour at work and makes people work more fully. Its assimilation is an essential mechanism for increasing productivity, leading to positive social change(7). This calls for the formation of relationships that elevate the interaction between culture and work to a higher level. It is time, in our view, that every higher education institution explores the vocation to the specialty and profession from the moment of entry. Thus, we can summarize that the profession of regionalist must be an institutionalized, requiring some training or experience, socially significant activity that is carried out in accordance with certain regulations and provides an opportunity for the realization of the individual. "Socially determined, professional activity and a link between society and the individual. Readiness for administrative work provided in the preparatory higher school is imperative and of particular importance for the formation of the personality of the future specialist, realizing his professional strengths and abilities in the field of regional development. It is linked to all stages of the professional's development, from orientation and selection, through training and adaptation, to his or her overall realisation. Ultimately, work readiness is a complex, difficult and continuous process of theoretical, applied and practical enrichment, as well as personal professionalisation of the regional development professional.

**CONCLUSION**

Developing certain psychological phenomena in the personality and atrophying others, the profession of the regional development specialist also reflects on the social nature of the professional, as it possesses not only socio-economic but also socio-psychological characteristics and requirements. It can have a field of expression in the regional business and public sector itself, in addition to network administration, communications and web development, material procurement, etc. Nearby fields that are expected to register a need for regional development specialists are related to IT and data security, online security and risk management with complementary education(9). For a successful career of this nature, an education in geographic information systems will be essential, as will experience and knowledge in data and systems security. The professions are also seen as self-defined power elites that are organised along guild lines. From this perspective, specialized knowledge and the code of ethics serve the function of preserving the power that the profession or guild possesses, as opposed to the general population e.g., the right of doctors to practice medicine and prescribe drugs; of clerics, in some countries, to contract or dissolve civil marriages, of psychologists to give and interpret certain psychological tests, the content and meaning of which are kept secret, of lawyers to sit in courts and pass judgement, to be prosecutors, judges, legal advisers or lawyers (2). From another point of view, professions are defined as activities in which a person who possesses specialised knowledge or skills offers, for a fee, to other persons or organisations to apply his or her knowledge or skills for their benefit. We believe that the profession of regional development specialist, as an objective given and an economic category, contains a wide range of mental features in the contemporary nature of work. It forms the mental profile of the individual, which, in turn, unites its psychological requirements, as well as public opinion about it. Therefore, communication realizes all professional functions- communicative, organizational, gnostic, constructive is essential in the management of regional development. It ensures the active position of the participants in the unified administrative process and an opportunity to get to know well the personal and individual

qualities, skills and knowledge that students can acquire in the framework of their studies in higher education institutions.

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# THE REGIONAL ECONOMIC PROGRESS AND THE NATURAL CHARACTERISTICS OF THE TERRITORIES

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**ABSTRACT**

This article is dedicated to the importance of the natural complex for the achievement of regional economic growth in individual territories. The presentation presents the topicality of the problem based on regional development and natural-geographical knowledge through the prism of management sciences. In the presentation of the material, views on the functional development of the spatial model for the assessment and analysis of the geographical environment and the possibilities for regional growth were presented. The possible limitations to the achievement of regional growth goals in the context of territorial development are outlined in an analytical plan.

**KEYWORDS:** nature, management, development, factors, models, potential

**ABSTRAKT**

Dieser Artikel ist der Bedeutung des Naturkomplexes für das Erreichen des regionalen Wirtschaftswachstums in einzelnen Gebieten gewidmet. In der Präsentation wird die Aktualität des Problems auf der Grundlage der regionalen Entwicklung und des naturgeografischen Wissens durch das Prisma der Managementwissenschaften dargestellt. Bei der Präsentation des Materials wurden Ansichten über die funktionale Entwicklung des räumlichen Modells für die Bewertung und Analyse des geografischen Umfelds und der Möglichkeiten für regionales Wachstum vorgestellt. Die möglichen Grenzen für die Erreichung der regionalen Wachstumsziele im Rahmen der territorialen Entwicklung werden in einem analytischen Plan skizziert.

**STICHWORTE:** Natur, Management, Entwicklung, Faktoren, Modelle, Potenzial

**RÉSUMÉ**

Cet article est consacré à l'importance du complexe naturel pour la réalisation de la croissance économique régionale dans les territoires individuels. L'exposé présente l'actualité du problème basé sur le développement régional et les connaissances géographiques naturelles à travers le prisme des sciences de la gestion. Dans la présentation du matériel, des points de vue sur le développement fonctionnel du modèle spatial pour l'évaluation et l'analyse de l'environnement géographique et des possibilités de croissance régionale ont été présentés. Les limites possibles à la réalisation des objectifs de croissance régionale dans le contexte du développement territorial sont décrites dans un plan analytique.

**MOTS-CLÉS:** nature, gestion, développement, facteurs, modèles, potentiel

## INTRODUCTION

In the modern world, the focus on regional growth has its geographic perspective, which encompasses a general understanding of the Earth's spatial patterns and processes. This web includes a web of living and non-living elements interacting in complex webs of relationships within nature and between nature and societies. Regionalists and geospatial science majors use maps and data to depict

relationships of time, space, and scale. Definition of concepts: natural environment, geographical environment, nature conservation (narrow and broad understanding of the concept). Main object of nature conservation. Interdisciplinary nature of environmental problems. The main aspects of environmental problems (ecological, resource, genetic, evolutionary, economic, social, demographic, historical).

The geographical environment is that part of the earth's nature with which human society directly interacts in its life and production activity at a given stage of historical development. The geographical environment is a necessary condition for the life and activity of society. It serves as its habitat, the most important source of resources, has a great influence on the spiritual world of people, on their health and mood. When assessing the role of the geographical environment in the life of society, two mistakes are made: exaggeration of this influence and underestimation. Both ideas lead to negative consequences. This is especially true of the second fallacy, which directs people to "conquer" nature. Recently, along with the concept of geographic environment, the concept of natural environment (or simply environment) has also entered scientific use, which can be defined as the conditions for the existence of humans and other organisms, including both natural and socio-economic factors; the latter include population density, changes in natural conditions made by man (building, change of air, water, destruction or change of vegetation, etc.). The term "environmental conditions" is close to the term "environment"; the use of the term "ecology" in this sense is imprecise, although it is common. The definitions of geographic and environmental, as a component, include the concept of "nature", which also requires clarification. The term "nature" means the whole world, everything that exists in all its variety of forms. The main task of geoecology is to study and exchange resources inlifefor geospheric fragments under the influence of natural and anthropogenic factors, protection, rational use and control from the goal to a productive natural environment for the present and future generations of people [Berberova-Valcheva, 2021]. The relevance of these enforcement issues is studied onnatural and technical systems,formed as a result of human activity, and develops on the mechanisms for their management. Functional development of the spatial model for assessment and analysis of the geographic environment and regional growth opportunities. The spatial pattern of distribution is defined by the arrangement of individual objects in space and the geographical connections between them. The ability to evaluate spatial patterns is a prerequisite for understanding the complex spatial processes underlying the spread of a phenomenon. In this direction, map types include reference and thematic formations from our surroundings [Berberova-Valcheva, 2021]. The types of spatial patterns represented on maps include absolute and relative distance and direction, clustering, dispersion, and elevation. When assessing regional economic growth from a spatial point of view, they create conditions for categorizing regions in three ways: formal, functional and perceptual regions. A formal region is defined by a limited number of associated features. A formal region is defined by a limited number of associated features. The entire history of humanity is a history of its interaction with nature, with the geographical environment. During this interaction, there is a constant metabolism between them, which has a complex and largely contradictory character. In the twentieth century. a qualitatively new stage in the interaction of nature and society began. Society's pressure on nature has increased dramatically. The transformation of natural landscapes into anthropogenic ones (urban, mining, agricultural, forest, recreational) has accelerated tremendously. The question of the degree of development of the geographical environment by humanity remains controversial. Some scientists believe that in our era all or nearly all of Earth's natural landscapes have become anthropogenic [Chervenkov, 2022]. Other scientists are more cautious. According to the calculations of local scientists, anthropogenic landscapes occupy more than 60% of the Earth's land, including approximately 20% of its

territory, they have been radically transformed. American scientists, studying the disturbance of natural landscapes on satellite images, came to the following conclusions [Chervenkov, 2022]. One third of the earth's surface has practically no traces of human activity. Moreover, for different regions, this figure varies significantly. So, for North America it is 38% of the territory, for the CIS countries - 34%, for foreign Asia - 14%, for Europe - 3%. History and main stages of the interaction of human society and nature, the main methodological levels of knowledge of problems and their interaction. Development of environmental knowledge. Management of nature in the early stages of civilization. "Geographization" of ecology and "greening" of geography. The importance of considering the spatial organization of the territory in the development of environmental policy. Tasks of geography in solving environmental problems: studying the mechanism of the impact of human economic activity on geosystems, creating a project for rational organization of the territory, forecasting the state of the natural environment [Chervenkov, 2022].

In this direction, within the framework of regional economic growth, the question of interpreting the concept of "ecology" in a narrow and broad ecological sense is increasingly being asked. These are mainly tasks of social ecology and human ecology. Traditionally, we can define that ecology is a science that studies the structure and functioning of organismal systems (populations, communities, ecosystems-biogeocenoses) in space and time under natural and human-altered conditions. The concept of geoecology is also important. The role of modeling and systems analysis in studying the interaction between society and the natural environment [Dimov and Stoyanova, 2015]. Global models of world development. Thus, geoecology is an interdisciplinary science that comprehensively studies the current state of the environment as a human-inhabited environment. We must point out that already in the middle of the 20th century, the term geoecology began to be used by scientists from both the geographical and geological schools, as well as from the humanitarian (sociological) sciences. That is why this concept is very quickly becoming a term of widespread use. Geoecology is used in the study and solving of all kinds of tasks, including even legal ones, especially in environmental protection legislation. In this broad understanding of geoecology, it not only includes classical ecology [Dimov and Stoyanova, 2015]. especially with environmental legislation. In this broad understanding of geoecology, it not only includes classical ecology [Dimov and Stoyanova, 2015]. especially with environmental legislation. In this broad understanding of geoecology, it not only includes classical ecology [Dimov and Stoyanova, 2015].

In addition, different approaches to the classification of natural resources creates a need to search for alternatives to support regional economic growth. Thus, the possible alternatives in the use of natural resources is their multi-functionality and interchangeability. Criteria for optimal use of resources depending on the size of their reserves and their economic importance, needs and feasibility of development brings to the fore the principle of complexity in the use of resources. This formulates the need to solve the methodological problems of geographic resource science. Analysis of the role of resources as sources of raw materials and environmental factor [Marinov, 2022]. Problems of economic and non-economic assessment of resources. Causes of resource degradation, measures to protect different types of different natural resources. Here it is appropriate to mention L. Guichardini (1521-1589), who in 1567 published the "Description of the Netherlands", a work that can be considered a scientific econo-geographical work, including a regional description of a new type. Elements of the advanced epistemology of the time were used. The work went through 35 editions, but did not inspire geographers to create such works. It is noted that he was ahead of his time, but I think that is not the point [Marinov, 2022]. Guicardini was ahead of the times and ahead of the geographers because he was not a geographer himself. Guicardini was the representative of the Florentine trading firms in Antwerp. He was a

businessman ignorant of the traditions of geographical castes. Another author like Faventis, who in 1561 in Venice published the work " It is written about the causes of the formation of mountains and other irregularities on the earth's surface. The causes include earthquakes, fire embedded in the earth, spirits of the mountains, the action of water streams, etc. Special emphasis was placed on the action of water flows. Fantasy and science coexisted in the work. An attempt to explain a geographical phenomenon is characteristic. The work of H. Gilbert, who in 1567 proposed a scheme for the movement of waters in the Atlantic Ocean and noted the influence of currents on the climate, also played a significant role. The harshness of Labrador's climate is explained by the influence of the cold current, carrying ice and fog. An explanation was needed and it was given. The Advanced Common Science Standard [Marinov, 2022] was used. From 1604, under the leadership of S. Champlain, a special expedition prepared by the French campaign, which had a monopoly on the purchase of furs, explored the coast of Canada at the mouth of the St. Lawrence. From 1608 to 1609, the river basin was explored. In 1608 Champlain drew up a description of Canada in terms of assessing the natural conditions for colonization(4). NF Reimers (1990) defines geoecology as a branch of ecology or geography that studies ecosystems or geosystems at high geo-hierarchical levels, including the biosphere. We can hardly agree that geoecology is only a branch of geography or ecology, where if the latter is understood as a branch of biology and incorrectly understood as a science of the protection of the natural environment. V. S. Preobrazhensky (1992) writes that geoecology is a "hybrid" between the two "mother" sciences - geography and ecology, without giving a justification for the object and subject of this relatively new science. V. B. Pozdneev (1999) defines geoecology as "an integral scientific direction, located in the sphere of the intersection of natural science, social science and technoscience, and studying the spatial and systemically organized processes and phenomena,

**RESULTS AND DISCUSSION**

***Modeling of regional economic growth processes and their methodological conditioning.*** The development of science is a deterministic process that affects territorial development. But determinism is not unambiguous. It is more correct to speak of the development of science as a deterministic-stochastic process. There is always a choice of development options and a lot depends on which option is chosen. And choosing an option is a largely subjective procedure. Scientists who move their science forward bear a great responsibility for its future. This shows the need for a reasonable, cultural, scientifically grounded approach to the reality of science. Nothing happens by itself and nothing remains without consequences in the history of science. Meanwhile, regionalists too often find themselves intellectually independent of their era. We can note that, in general, regional science gives the world remarkable researchers as it develops in accordance with the global geography and spatial development model. Regional development studies the differences from place to place, from the point of view of economic growth, we can divide the need for systematization in the direction of a economic and physical (since Marxism forbade the mixing of "social and natural models") direction of regional science, secondly , local history did not make a significant contribution to the modeling of regional economic growth, and small maps were classified in cartography. Thus, regional development did not develop effectively enough because in our country there has always been confusion regarding the priorities of regional development and in their management model(6). From the beginning of the 1990s, the new role of regional development as a practical science gradually grew. It became necessary both for political elections and for the development of regional policy, for the purposes of regional organization and for the preparation of the land cadastre. This causes the need to derive the following classes of factors for the needs of regional economic growth:

Class 1 - "principles of observation of factors, in order to observe correctly, the researcher must:

A. To have "preconceived notions acquired by him through study and sufficient development."
B. "Make long-term observations of the subject in its various aspects. The more facts, the less possibility of errors in generalizations."
C. Pay special attention to the exceptions to the rules, try to reveal their essence, not press them to the generally accepted views.
D. In addition to knowledge of external form, one must have knowledge "of the very matter of the object which produces external forms by its vibrations," i.e. understand the physical and chemical properties of the object empirically.
Class 2 - "principles relating to the binding of facts."
It is necessary to reveal connections, not to settle for isolated facts. “True philosophy consists in revealing relations hidden to the short-sighted eye and the careless mind.” There are two kinds of relations—the “order-and-gather relation” and the relation of analogy.

***Regional development – from the collection of facts to the theoretical models.*** For a long time, the main method of regional research was expeditionary. Geographical knowledge of the world was accumulated during the military campaigns of antiquity, trade and travel. The era of territorial geographical discoveries that answered the question "where" ended in the middle of the 20th century. with the disappearance of the white spots on the Earth. The era of theoretical discoveries began in the 19th century, when the first global laws were revealed - the law of latitude and altitude and the first law of the location of economic activity in space - a model for locating agricultural zones of different intensity around a market center(6) . The emergence of patterns in regional development, proving that there are much more regularities in the world around us than it seems at first glance, has become a new era in regional studies research methodology. The researcher, in order to better understand the essential features and the most important regularities, seems to go beyond the real, simplifying reality, discarding the insignificant features. The regional development of the economy has long occupied specialists, researchers of the problems of location and development of the economy by region. Regional development can be artificial or natural in nature [Petrov, 2021]. Natural regional development has been observed since ancient times and is usually related to the sources of local resources that lead to the concentration of different, but usually related, economic activities in that area. The natural development of the regional economy brings with it an informal distribution of activities across the territory of the country, thus forming separate economic regions. With the artificial regional development of the regional economy in a country, there is a concentration of many resources in defined territories, which very quickly help the development of the local economy. However, artificial regional development also has one major drawback. Very often, when trying to achieve planned regional development, investments are made in the construction of infrastructure and production facilities, which do not correspond to the local resource provision, as well as the ability to absorb a greater part of the produced output by local consumers [Petrov & Tsonkov, 2022]. By its nature, regional development implies a quantitative expansion of production activity in a territory, which includes the construction of infrastructure (roads, electrification, water supply, telecommunications, etc.), production facilities (factories, workshops, workshops, mining enterprises, etc.), administrative bodies for the development of the local economy, such as free zones, customs warehouses, public warehouses, stock exchanges etc. [Patarchanov, Patarchanova and Zarkov, 2018]. Insofar as regional development is a conscious form of purposeful activity of regional society, the formulation of any definition of regional development requires that it be viewed as a state in which human-controlled factors lead to the rational use of resources for the benefit of the local population. Regional development from this point of view is extremely important for the development of the general

economic and social situation in the local region. A key feature of regional development is that it leads to regional economic growth. Regional economic growth by its nature represents the qualitative manifestation of regional development [Patarchanov, Patarchanova and Zarkov, 2018]. This is also the main difference between them, because regional development is related to the quantitative change of economic parameters in the region, related to the construction of new infrastructure and production capacities, and regional economic growth takes into account qualitative characteristics, which usually measure the volume of monetary transactions in the region. the increase in income in the region, the increase in employment, etc. – all indicators that are directly influenced by growth in regional development. Undoubtedly, however, these two phenomena are interconnected, because regional development leads to regional economic growth, which in turn determines the accumulation of new free capital,

***Possible limitations to the achievement of regional growth objectives.*** The stimulation and limitation of regional development is an important prerequisite for the realization of the general concept of the development of regional prosperity. Both incentives and restrictions must be carefully used so as not to undermine the stated goals of regional economic growth. One such positive restriction that can lead to the growth of regional development in an area is the ban on the export of raw natural resources or production materials, local mining. This restriction will in practice direct local exporters to the processing of these raw materials into finished products, which will be related to the construction of production facilities, construction of transport infrastructure and other measures related to regional development and economic growth [[Vladeva and Vladev, 2019]. Often times in developed regions the economy is overloaded in macroeconomic language, i.e. overproduction is reached, which cannot be realized and the opposite effect is obtained for regional development, because companies go bankrupt, the incomes of the population are reduced and the migration of labor resources is reached, which, for example, in Bulgaria has been a major problem for years. Therefore, in order to stimulate regional development and economic growth within normal limits, a way must be found to limit them in terms of the available production resources used [Vladeva and Vladev, 2019]. The most common such restriction, for example, is the raising of local taxes and fees, which will lead to the seizure of investment capital from local economic entities, which in turn will directly affect their ability to invest in new productions, and from there it will also affect the growth of regional development and regional economic growth. Naturally, other restrictions are possible, but they must be very well implemented, because unlike stimulation, restriction can also have the opposite effect on regional prosperity. Naturally, one should not forget that the quantity and quality of all available production resources in the region are natural and important prerequisites for the development of the regional economy. These can be both natural sources of resources - natural wealth, minerals and the like, and artificially created resources - investment capital, trained workers, administrative and tax benefits for business. In order to wake up the local economy in the region, it will also be necessary to raise the standard of living of the local population, which will attract new productive forces, which in turn will lead to growth in regional development [Vladeva and Vladev, 2019]. Naturally, the opposite way is also possible - by means of encouraging investment of funds in the region, which will expand its regional development and from there ultimately contribute to increased regional economic growth. Thus, the state will pay special attention to the model of regional economic growth, especially in problem regions, which are distributed depending on the level of development, the depth of crisis processes and their importance for solving national socio-economic problems. The main types of problem regions in the current situation are: backward, depressed, crisis, as well as regions of

special strategic importance. The problems with the withdrawal of the economically backward regions remain acute,

**CONCLUSION**

In the current stage of development of economic systems, it can be seen that growth is increasingly becoming an integral component of territorial development. It also defines the framework of a socio-economic factor as the main one in the assessment of the processes of regional development of individual territories. The development of the economic base of the lagging regions will require considerable time and active state support, primarily in terms of attracting investment to these regions and creating new jobs, including at the expense of the budget. The population of these regions will be provided with social assistance from the fund for financial support of the constituent entities within the nation-state.

Depressed areas are territories with sufficient economic potential, but as a result of a structural crisis, they are characterized by a constant decline in production and real incomes of the population and increasing unemployment. This category of territories should include not only the constituent entities of the state, but also separate parts of regions, territories or local spaces, which will allow targeted assistance to distressed areas without extending to the developed centers of the constituent entities below the national level of the state. The methods and mechanisms for supporting entrepreneurship, attracting private (including foreign) investment, promoting investment activity, restructuring enterprises, retraining staff, etc., provided for by normative and legislative acts. to facilitate the access of enterprises and the population of these regions to existing (or emerging) channels of financial assistance, will be the main form of support for depressed regions. In this regard, during the development of the program, a complete inventory of such mechanisms will be carried out, the effectiveness of their action will be evaluated and the possibilities for concentrating their use mainly (or exclusively) in depressed regions will be determined.

In this regard, it is expected:

- ensuring that enterprises in depressed regions receive priority consideration of applications for funds allocated for structural recovery and rehabilitation of production, developing a mechanism for providing technical assistance in the preparation of such applications;
- review of the preferential (preferential) procedure for considering applications for government loans (including conversion loans);
- priority provision of tax credit (in case of cancellation, preservation of this form of support for enterprises exclusively for depressed regions).

Ensuring the priority of depressed regions in the allocation of investments provided by federal programs for the development of industrial infrastructure, taking into account:

- creation of conditions for additional attraction of funds from the employment funds, used for retraining of personnel, financing of public works, etc.;
- provision of targeted loans for housing construction to exempted workers from industrial enterprises (with allocation of plots to the property);
- providing loans to the population for education (including higher education), retraining, etc.

With the introduction of new forms of support for structural adjustment, they will be directed to their priority application (working out) in depressed regions (primarily to preservation and creation of new jobs). The problems of the crisis regions, characterized by the extreme nature of the economic, socio-political and environmental processes (stopping of the majority of industrial enterprises, inter-ethnic

conflicts, the consequences of natural disasters), will be solved with the help of federal targeted programs. Crisis regions will be subject to measures taken in relation to depressed regions.

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# CRM STRATEGIES FOR DIGITAL TRANSFORMATION: ANALYSIS OF POTENTIAL AND INNOVATIVE STRATEGIES AND TRENDS IN BIG DATA MANAGEMENT AND CUSTOMER LOYALTY?

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**ABSTRACT**

The digital transformation of businesses has led to an increased use of big data, which has been shown to positively impact customer loyalty and business results. However, the implementation of digital transformation and the use of big data also pose significant challenges. This article aims to explore the effects of digital transformation on the use of big data, e-loyalty, and business results, and to discuss the challenges and opportunities associated with these trends. Drawing on a review of the academic literature, this article highlights the importance of digital transformation in enabling businesses to effectively collect, store, and analyze vast amounts of data, leading to improved decision-making and increased operational efficiency. Furthermore,

**KEYWORDS:** CRM, e-loyalty, digital transformation, big data, CRM trends

**ABSTRAKT**

Die digitale Transformation von Unternehmen hat zu einer verstärkten Nutzung von Big Data geführt, die sich nachweislich positiv auf die Kundentreue und die Geschäftsergebnisse auswirkt. Die Umsetzung der digitalen Transformation und die Nutzung von Big Data bringen jedoch auch erhebliche Herausforderungen mit sich. Ziel dieses Artikels ist es, die Auswirkungen der digitalen Transformation auf die Nutzung von Big Data, E-Loyalty und Geschäftsergebnisse zu untersuchen und die mit diesen Trends verbundenen Herausforderungen und Chancen zu erörtern. Auf der Grundlage eines Überblicks über die akademische Literatur unterstreicht dieser Artikel die Bedeutung der digitalen Transformation, die es Unternehmen ermöglicht, große Datenmengen effektiv zu sammeln, zu speichern und zu analysieren, was zu einer verbesserten Entscheidungsfindung und einer höheren betrieblichen Effizienz führt. Darüber hinaus,

**STICHWORTE:** CRM, e-loyalty, digitale Transformation, Big Data, CRM-Trends

**RÉSUMÉ**

La transformation numérique des entreprises a conduit à une utilisation accrue des big data, dont il a été démontré qu'elle avait un impact positif sur la fidélité des clients et les résultats des entreprises. Toutefois, la mise en œuvre de la transformation numérique et l'utilisation du big data posent également des défis importants. Cet article vise à explorer les effets de la transformation numérique sur l'utilisation des big data, l'e-fidélité et les résultats commerciaux, et à discuter des défis et des opportunités associés à ces tendances. S'appuyant sur une revue de la littérature académique, cet article souligne l'importance de la transformation numérique pour permettre aux entreprises de collecter, de stocker et d'analyser efficacement de grandes quantités de données, ce qui permet d'améliorer la prise de décision et d'accroître l'efficacité opérationnelle. En outre,

**MOTS-CLÉS:** CRM, fidélisation électronique, transformation numérique, big data, tendances CRM.

**INTRODUCTION**

In addition to all the factors that are important for the implementation of digital transformation in a company - digital culture of employees, technological prerequisites for the implementation of e-business and others, there is also the need to know customer behavior. This can be ensured by collecting, storing, managing and analyzing large data sets (big data). Depending on the level of detail and development of the company's online CRM strategies, we can even talk about building electronic loyalty (e-loyalty).


Figure 1. The 5 Vs of Big Data. Source: Gillis A., revised by Ruskov, 2022

***E-Loyalty - electronic loyalty.*** Many researches in the field of marketing try to discuss the factors and reasons for the formation of consumer loyalty to the company. Customer loyalty can be shown through repeat purchases of products. On the other hand, the company gains customer loyalty by building good communication between suppliers and consumers through direct contact. However, with the development of online businesses, such as e-commerce, creating customer loyalty is more difficult and complex, as all interactions and relationships between consumers and companies are done through technology. In online-based transactions, loyalty is called e-loyalty, which refers to the willingness of virtual consumers to intensively or continuously visit certain online shopping websites due to several favorable factors. It is the commitment of a user to use a website, e-commerce or a particular brand when there are many alternative options available. Additionally, e-loyalty is shown by the consistency of users using website features and is also defined as the behavior of customers to repeatedly purchase products or services at the same store. According to Carlos Favian (2006, p. 43), e-loyalty refers to consumers' willingness to buy something on a particular website without wanting to turn to another website. In addition, e-loyalty can be an indicator of the achievement of e-CRM goals for the company and consumers.

***The relationship between Big Data and CRM.*** Big Data is everywhere. Whether it comes from the web, the business applications users use, or deep within the logs of various types of machinery, Big Data helps all businesses grow. By doing so, they become more strategic and profitable.

***What is Big Data?*** Big Data refers to the vast amount of information that businesses collect from online and offline sources. These sources include websites, social networks, mobile applications, software,

documents, computer logs, sensor networks, and many others. However, this explosion of data is not necessarily significant because of its sheer volume, but because of what it can do. Although it's often described in terms of the "three Vs"—volume, velocity, and variety—there's much more value in big data that makes it so important to all types of businesses. So we can add two more V's - credibility and value.

The benefit of moving and using big data has a lot to do with extracting value from the data with the right actions. For this purpose, algorithms and prediction models are applied, through which significantly more specific business problems can be solved. Simply put, Big Data delivers all kinds of intelligence that helps businesses make better decisions.

***How exactly does big data work?*** Data analysts, data scientists, predictive modelers, statisticians, and other analytics professionals collect, process, clean, and analyze growing volumes of structured transaction data, as well as any other forms of data that are not used by conventional Business Intelligence (BI) and analytics programs. Here is an overview of the four steps that make the big data analytics process work:

Data collection- data scientists collect data from various sources. Often this is a combination of semi-structured and unstructured data. Every organization uses different data streams, but some common sources include: internet click data; web server log files; cloud applications; mobile apps; content on social networks; text from customer emails and survey responses; cell phone records; machine data captured by sensors connected to the Internet of Things (IoT).

Preparation and processing- once data is collected and stored in a data warehouse or data lake, data scientists must properly organize, configure, and partition the data for analytical queries. Thorough data preparation and processing leads to higher productivity.

Cleaning- to improve their quality. Data scientist's clean data using scripting tools or data quality software. They look for any errors or inconsistencies, such as duplication or formatting errors, and organize and sort the data.

Analysis and visualization- the collected, processed and cleaned data are analyzed with analytical software. This includes tools to:

- data mining, which sifts through data sets in search of patterns and relationships;
- predictive analytics, which builds models to predict customer behavior and other future actions, scenarios and trends;
- machine learning, which uses various algorithms to analyze large data sets;
- deep learning, which is a more advanced branch of machine learning;
- text mining and statistical analysis software
- artificial intelligence (AI);
- mainstream business intelligence software;
- data visualization tools.

***Big Data and CRM.*** Not too long ago, available CRM systems often failed to meet business expectations because, in fact, CRM was largely used only for customer relationship management. Now, Big Data CRM goes much further and is related to the overall customer service from all sides. Accordingly, the intrusion of large data sets coming from all sorts of sources leads to the need to consider "customer service" through the lens of Big Data. Dr Mark van Rijmenam describes four main types of customer interactions:

Management of the customer with structured data such as address, contact information and last moments of contact is only one part. Customer management is primarily an inside-out approach where the company "manages" the customer by sending messages and storing basic information about them. To do this, it uses pre-defined channels at pre-defined working hours. This company-defined process lacks flexibility. However, it is important for companies to have these types of interactions as it is the basis for understanding the customer.

Interaction with the customer with unstructured data such as emails, tweets, Facebook posts, comments, etc.

The interaction is customer-driven or outside-in. There is a two-way communication process and the customer decides when to contact the organization and expects a quick response, even outside of business hours. Everyone in the company needs to be involved in these processes, and this includes customer-driven channels such as social networks or different types of online communities.

Analyzing of customer actions with structured data such as online visits, clicks, bounce rates, etc. is a company-driven process primarily performed by analysts. These analysts typically perform an action when asked for information or provide standardized reports to traders on a regular basis. With big data techniques involved, the role of the analyst will change significantly as they will be required to more proactively deliver results on a more regular, preferably real-time, basis.

Knowing the customer. Big data engineers develop an approach to read and process mixed data to perform analytics that allow an organization to understand each customer individually in real time. They can provide referral traffic forecasts to develop/deliver the right product, at the right spend, at the right price, and through the right channel. The result will be an increased conversion rate and better revenue.

## RESULTS AND DISCUSSION

Within the framework of the research, I found the following trends:

***Strategy 1. Businesses can condense and optimize their sales and marketing technology stack.*** As CRM systems and core technology tools become increasingly sophisticated, sales and marketing teams can use fewer tools than a few years ago. As a technology trend for 2022, teams will increasingly need to analyze why they are paying for App A when App B can already do the same job, even more, at a lower cost. For best results, teams will create more integrations and two-way syncs to ensure that contact data is always updated across all apps.

***Strategy 2. Chat and conversation systems will start connecting to CRM systems.*** Voice-based conversational technology is critical to the evolution of SaaS tools. This is a key factor in accessibility, but it also just makes the technology easier and more enjoyable to use. The technology makes it easy for marketers to track, message, update and notify their teams about customer data. More and more businesses can use voice assistant and supporting hardware in operational processes and interfaces.

***Strategy 3. The customer experience of CRM platforms will be as important as its features.*** 85% of customers say that the experience a company provides is as important as its products and services. There are several ways CRM technology can be used to help a company meet the expectations of today's customers: (1) Live chat for quick support; (2) Enriched data to show the complete customer journey and previous support tickets; (3) Access to customer data for most departments; (4) Automated bases; (5) Synchronize customer data between applications to display a 360-degree view. As more organizations evolve their customer experience strategy, others must follow suit. 79% of customers say that an exceptional experience with a company would raise their expectations of other companies.

***Strategy 4. Younger generations insist on using CRM platforms.*** In 2022, even a one-employee company is big enough to need a CRM. If it manages contact data, manages a contact line, and has customer data to track, the company can benefit from using a CRM. These are familiar pain points for freelancers. They provide a strong market segment for CRM platforms.

***Strategy 5. Analytics capabilities will need to be the strong point of CRM platforms.*** With more and more advanced analytics at their fingertips, organizations are in the best position to identify problems, solutions and opportunities. Companies recognize this, and more and more of them are looking to powerful analytics tools to process and report on their data in real time. CRMs should also offer this type of analytics because organizations want the most accurate view of how their sales pipeline is performing, how satisfied customers are, and what is driving churn. While not all organizations are ready for complex stand-alone analytics platforms, more and more SMBs are viewing CRM analytics as a must-have rather than a nice-to-have.

***Strategy 6. SaaS - everything as a service.*** SaaS – software as a service – is well known. XaaS stands for “everything as a service” and adopts the concept of SaaS. It extends it to cover every form of product and service. With XaaS, any IT function can be transformed into a service for enterprise consumption — from Platform as a Service (PaaS) to Infrastructure as a Service (IaaS), among many others. XaaS includes any computing service delivered over the Internet and paid for by subscription rather than a fixed one-time price. As a technology trend for 2022, more and more organizations will look to cloud solutions for new corners of their business, whether as part of their CRM, a stand-alone system or a connected tool.

***Strategy 7. CRM should be connected to every other part of the business.*** Every year, more and more organizations look to their CRM as an essential organ for their company's well-being. For this to happen and to reap the benefits, CRM must be connected to all other tools and processes in the organization. From email marketing tools to an invoicing system. It is important that two-way synchronizations between the tools that store customer data and the CRM system are available and fine-tuned. Keeping data in sync is the best way to avoid human error, solve the problem of traditional data silos, save time on manual data entry, and present the clearest picture for each team. In the 2020s, there should be no reason for businesses not to trust their customer data,

**CONCLUSION**

For the transformation to e-CRM to occur, it is necessary for companies to focus more and more on the "digital customer", which requires the use of e-CRM, which in turn requires an adaptive change of the overall culture and strategy of the corporation/organization. as well as investing funds in the use of modern software solutions for processing large data sets. The implementation of digital transformation and the use of big data, however, also pose significant challenges, such as concerns about data privacy and security, as well as the need for skilled personnel for effective data management and analysis.

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# THE IMPACT OF THE ENERGY TRANSITION UNDER THE CONDITIONS OF THE GREEN DEAL ON THE WORKFORCE OF BULGARIA

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**ABSTRACT**

Bulgaria, as a member of the EU, has obligations under the listed and all other Community policies regarding nature protection, which places some systemic constraints on coal-fired power plants in the country, with the prospect of phasing out operations in the medium term. On the one hand, the cessation of coal mines in the Maritsa basin and thermal power plants is a natural consequence of climate change adaptation actions. On the other hand, the process of decommissioning the thermal power plants must be viewed with the utmost care and due to the significant number of people employed in the related or dependent economic sectors. The process will happen gradually, and the difficulties and pressures in generating electricity and heat using fossil-based centralized combustion plants will be caused by many different factors. The aim of the article is to determine the impact of energy transition under the conditions of the Green Deal on workforce of Bulgaria. Through a system of indicators, we seek to assess both the primary and secondary effects.

**KEYWORDS:** energy transition, green deal, workforce

**ABSTRAKT**

Als Mitglied der EU hat Bulgarien Verpflichtungen im Rahmen der aufgelisteten und aller anderen Gemeinschaftspolitiken in Bezug auf den Naturschutz, wodurch den Kohlekraftwerken im Land einige systemische Beschränkungen auferlegt werden, mit der Aussicht auf eine mittelfristige Einstellung des Betriebs. Einerseits ist die Einstellung des Kohleabbaus im Maritsa-Becken und der Wärmekraftwerke eine natürliche Folge der Maßnahmen zur Anpassung an den Klimawandel. Andererseits muss der Prozess der Stilllegung der Wärmekraftwerke wegen der großen Zahl von Menschen, die in den damit verbundenen oder abhängigen Wirtschaftszweigen beschäftigt sind, mit äußerster Sorgfalt betrachtet werden. Dieser Prozess wird sich schrittweise vollziehen, und die Schwierigkeiten und der Druck bei der Erzeugung von Strom und Wärme mit fossilen Zentralfeuerungsanlagen werden durch viele verschiedene Faktoren verursacht. Ziel des Artikels ist es, die Auswirkungen der Energiewende unter den Bedingungen des Green Deal auf die Beschäftigten in Bulgarien zu ermitteln. Mit Hilfe eines Systems von Indikatoren versuchen wir, sowohl die primären als auch die sekundären Auswirkungen zu bewerten.

**STICHWORTE:** Energiewende, Green Deal, Arbeitskräfte

**RÉSUMÉ**

La Bulgarie, en tant que membre de l'UE, a des obligations en vertu de la liste et de toutes les autres politiques communautaires concernant la protection de la nature, ce qui impose certaines contraintes systémiques aux centrales électriques au charbon dans le pays, avec la perspective d'un arrêt progressif des opérations à moyen terme. D'une part, l'arrêt des mines de charbon dans le bassin de Maritsa et des centrales thermiques est une conséquence naturelle des mesures d'adaptation au changement climatique. D'autre part, le processus de démantèlement des centrales thermiques doit être

envisagé avec la plus grande prudence en raison du nombre important de personnes employées dans les secteurs économiques connexes ou dépendants. Le processus se déroulera progressivement, et les difficultés et les pressions liées à la production d'électricité et de chaleur à l'aide d'installations de combustion centralisées à base de combustibles fossiles seront causées par de nombreux facteurs différents. L'objectif de cet article est de déterminer l'impact de la transition énergétique dans les conditions du Green Deal sur la main-d'œuvre bulgare. Grâce à un système d'indicateurs, nous cherchons à évaluer les effets primaires et secondaires.

**MOTS-CLÉS:** transition énergétique, green deal, main-d'œuvre

**INTRODUCTION**

The energy of the 21st century, based on the technical perfection of the combustion boiler and the classical steam turbine, is powering consumer society. The carbon dioxide emitted from the burning of fossil fuels has increased more than 24-fold globally in the last 125 years, and its concentration in the first week of 2015 for the exceeded 400 ppm (parts per million) for the first time. The increased concentration of various greenhouse gases in the atmosphere is causing a shift in the equilibrium of the planet's climate system; extreme weather events are becoming more frequent and seasonal nuances are decreasing; habitats are being irreversibly altered and a colossal loss of biodiversity [Bellanger, Pichery and Aerts D, et al., 2013]; [Borisov, Kolaj, Yancheva and Yancheva, 2019]

European Union (EU) policies to prevent dangerous climate change are considered a strategic priority for the community. Within the European Union, the directive concerning emissions from industrial combustion plants was adopted in 2003. At the same time, the EU has several documents that define the cross-section of the various policies and measures in the field:

- The "20-20-20" package of measures - a 20% reduction in greenhouse gas emissions compared to 1990, at least 20% renewables in the energy mix and a 20% increase in energy efficiency. It is estimated that just reaching 20% renewables in the energy mix will create 417,000 new jobs, and reaching a 20% increase in energy efficiency will create around 400,000 more;

- The 2030 framework - 40% emissions reduction compared to 1990 + at least 27% renewables as part of the energy mix;

- Roadmap 2050 - reduce emissions by 60% relative to 1990 by 2040 and by 80% by 2050;

- The European Emissions Trading System (EU ETS) is the first and largest trading system for greenhouse gas emissions from industry covering 31 EU/EEA-EFTA countries and covering over 11,000 combustion installations, including airlines [Communication from the Commission to the European Parliament, the Council, the European Economic and Social Committee and the Committee of the Regions – “Towards recovery and job creation", Brussels, 15.11.2012.]

Bulgaria, as a member of the EU, has obligations under the listed and all other Community policies regarding nature protection, which places some systemic constraints on coal-fired power plants in the country, with the prospect of phasing out operations in the medium term.

On the one hand, the cessation of coal mines in the Maritsa basin and thermal power plants is a natural consequence of climate change adaptation actions. On the other hand, the process of decommissioning the thermal power plants must be viewed with the utmost care and due to the significant number of people employed in the related or dependent economic sectors. The process will happen gradually, and the difficulties and pressures in generating electricity and heat using fossil-based

centralized combustion plants will be caused by many different factors, the most important of which in the short term could be be:

- Divestment from coal-fired power plants and related sectors, products, and services;
- A natural drive towards (domestic and industrial) energy independence coupled with a gradual decentralization of energy;
- Public citizen pressure for the transformation of the traditionally monopolized and over-regulated energy system;
- European policies and requirements;
- Bulgarian legislation and justice system. [Bulletin on the state and development of the energy sector in Bulgaria 2012-2020.]

In the energy sector, changes comparable to the disruption in the fixed telephony sector are expected as mobile devices enter the market. SmartGrid, peer-to-peer, distributed, and community energy projects in the age of renewable energy, along with awareness of the need of energy independence of citizens, can deal a devastating blow to the over-regulated energy system and coal mining [European Network of Transmission System Operators for Electricity (ENTSO-e) data portal, 2003 - 2013.]

According to the latest EUROCOAL Employment report (2013), there are 11,300 people directly employed in lignite and brown coal mining in the country, but there are also around 67,100 people in coal-related sectors (energy, supply of equipment, services, development, etc.). This figure corresponds to some extent with the National Statistical Institute's (NSI) figure of around 13 300 people employed in coal mining. The NSI also indicates 15 620 people directly employed in electricity generation, but this figure includes those working in all power plants, including nuclear power, non-coal thermal power plants and renewable energy plants. According to data from companies in the Commercial Register of the Registry Agency and our rough calculations, those employed in coal mining in the Marija Basin are about 12 000 people and over 5000 people are employed in servicing thermal power plants.

The aim of the article is to determine the impact of energy transition under the conditions of the Green Deal on workforce of Bulgaria.

Through a system of indicators, we seek to assess both the primary and secondary effects.The methods used to conduct the study are:

- System analysis (analysis of the object represented as a system). The main objectives of its implementation, in this case, are to derive and justify the main trends in the development of the phenomena and processes under study [Borisov and Behluli, 2020];
- Situational analysis. Its application will be used to characterize the state of the enterprises, industries and regions under study at a certain time or for a certain period. Depending on the needs of management, a system of indicators will be used to characterize the state of the energy sector in terms of employment and its changes in the event of restructuring of the sector [Borisov and Radev, 2020];
- Benchmarking. This will be used to draw certain conclusions about the position of the national sector in relation to that of the EU. For this purpose, comparative assessments of the main parameters of the sector are made [Borisov and Miladinoski, 2022];
- Diagnostic analysis. It is used to examine in depth the conditions and factors that have led to the observed state of the sector [Borisov, Qerimi and Behluli, 2020].

**RESULTS AND DISCUSSION**

***The direct impacts on fossil fuel power station workers.*** In the last ten years, there has been a significant growth in micro enterprises operating in the extractive industries sector. Over the same period, large mines and quarries, i.e. those with more than 50 employees, have lost more than 30% of their staff, or 95 000 people. And this is a trend that shows how important it is to start a debate on the topic of the transition to independence from coal in the Stara Zagora region. According to publicly available data from Mines Maritsa-East EAD, the number of people working in the mines is 7 084 employees. There are no publicly available estimates of the indirect jobs generated and the indirect economic effects on the different regions in general, but the Maritsa-East complex is served by a whole range of additional services - the provision of food, clothing and transport for workers; lime for the Sulphur purifiers; external consultants and subcontractors for certain construction and maintenance activities to ensure the technical operation of the equipment, both in the TPP and in the mines; and many others. The interconnection of fossil giants with prospective manufacturing and commercial sectors in the Stara Zagora region deserves attention. Clarity is needed on the possible crisis scenarios and options for reducing socio-economic damage in the district, in the face of overwhelming climate pressure directed at thermal power plants and their phased withdrawal from the country's electricity system. A clearer view of the possible and probable crises is needed, as well as measures that can be taken to avoid crises in the area.

***The indirect impacts for workers in the area of energy transition.*** Mono-sector' micro-regions, such as the area around the complex of open-pit mines and thermal power plants around the Maritsa basin, are geographical areas highly dependent on one or several interconnected economic factors. When a large share of the economy is mainly occupied by one large and centralized economic sector (in this case coal mining and energy), it is a prerequisite for a significant dependence of the local community on it. This, coupled with a legitimate fear on the part of employees to directly raise questions about pollution; the effect of pollution on human health; economic dependence; and the need to support alternatives to develop the local economy, mono-sector development often turns from a blessing in the good days of high demand for the product produced, to a heavy burden when the market does not have a need for the production planned. With few exceptions, these regions suffer from many economic hardships and serious unemployment. As a rule, these cities require large state subsidies for the sole purpose of maintaining employment and social peace. At the same time, there are not many funds left for investment in for human resource development, nor for the maintenance infrastructure. Mono-sector cities and regions have a similar fate almost everywhere in the world - after decades of flourishing, they remain in an unenviable of decline and an uncertain future. In the Marisch Basin region, mines and thermal power plants are the largest employers, and reducing the market need for coal or electricity would have a lasting negative impact on the local economy, employment, and quality of life in the area. The situation is similar in the areas of small coal mines - Oranovo, Beli Breg, "Stanyantsi", where small mines turn out to be the main employer for small municipalities.

Of critical importance to the districts will be the drive to diversify economic activities in a way that no single economic sector dominates from the past. The decommissioning of thermal power plants and

mines will have drastic implications for the micro-regions where coal-fired power and mining facilities are located. However, a period of about 5 years is quite realistic and quite sufficient to provide in time for effective worker retraining measures and programmes to diversify economic activities in coal mining and coal-burning dependent regions - and this is the only policy direction leading to long-term recognition. Many of those employed during this time will have reached retirement age and will not need to be retrained or enrolled in certain programs, while maintaining their peace of mind and security. Finding economic alternatives and new forms of employment actually concerns the development strategies of the municipalities and districts themselves, so that there is a chance of preventing demographic catastrophe and preventable climate migration.

***Comparison of the impacts of the energy transition with the European countries***. In Bulgaria, there is no strategy and specially developed programmes for the retraining of coal workers. In addition, the Ministry of Labour and Social Policy does not develop plans and strategies for alternative employment in sectors related to coal mining. There are, however, separate measures for retraining and support during unemployment, which are not specifically provided for this purpose but could be used.

Policies within the State Employment Agency. The programmes that unemployed and employed people can still apply for are mainly under the Operational Programme "Development of the Human Resources". Under this operational programme, the 'I can do more' programme offers training opportunities - basic and additional, on a voucher basis. For some of the measures foreseen by law, it appears that funds have not yet been earmarked. When such funds are made available, the measure to subsidise the redundancy of early retirees at pre-retirement age, which is a realistic scenario in the coal mining sector, will also be launched. The opportunities provided by the State in the event of unemployment are mainly divided into training and retraining of the employed and unemployed; promotion of self-employment and subsidising the unemployed person and the employer.

One month before planned mass dismissals, the employer is obliged to notify the Employment Agency and the representatives of the employees in the enterprise, stating: the reasons for the intended dismissal; the number of employees to be the number of employees to be dismissed and the main economic activities, qualification groups, and occupations to which they relate; the number of employees in the main economic activities, qualification groups, and occupations in the enterprise; the specific indicators for the application of the selection criteria for the employees to be dismissed; the period during which the dismissals will take place. However, prior to such notification, the employer should have consulted the workers beforehand. For failure to give notice, the Employment Agency may penalize the employer with an inadequately low fine of 200 euro per worker. The procedure and method for carrying out consultations shall be determined by the employer, the representatives of the trade unions, and the representatives of employees.

Encouraging the unemployed who started work without the help of the Employment Agency. The unemployed should have been registered unemployed immediately before starting work and at the same time have been:

- subject to monthly social assistance for at least 6 months prior to starting work;

- subject to monthly social assistance, registered in the territorial subdivisions of the Employment Agency - Directorate "Labour Office" /LAB/, who were included in programmes and measures for

employment and started working no later than 6 months from the date of termination of the contract under the relevant programme or measure due to the expiry of the period for which it was concluded;

- people with permanent disabilities or war invalids of working age, subject to monthly social assistance, registered with the LAB;

- single parents of working age, subject to monthly social assistance, registered with the LAB.

Subsidies of 20 euro per month for people with disabilities and 15 euro per month for all others are paid on a monthly basis, but not for more than 6 months.

Internship of unemployed persons. The main objective of the programme is to create special apprenticeship jobs for a period of 6 months for unemployed people who have acquired a qualification in a profession or part of a profession but who have no work experience in that profession. Under this programme, the employer receives the following subsidies for each unemployed person employed: - a wage of 150 euro; - additional remuneration at the minimum rates laid down in the Labour Law. The employer is obliged to conclude an employment contract with the worker for at least 6 months.

Promotion of Entrepreneurship. The aim of the measure is to encourage the unemployed to start a business on their own or together with others. Exempted workers can choose to start their own business and receive their benefits in full (or a one-off 1 000 euro and transport costs if the workplace is outside the locality. The subsidies in this case are:

- An additional sum of 720 euro (from July 2020) provided it it provides employment under the approved business project for another unemployed family member without entitlement to unemployment benefit;

- A loan of up to 500 euro for qualification in the subject of the business activity or its management under the approved business project;

- Reimbursement of the costs of external consultancy and/or support services used within the framework of the contract, up to 250 euro, in accordance with the nomenclature and limits approved by the Labour Office Directorate.

Hiring the unemployed persons over 50 age. The main objective of the measure is to provide employment to unemployed people over 50 years of age for a period of 12 months. For each unemployed person employed, a wage of 150 euro (for secondary education and below) and 190 euro for higher education; additional wages at the minimum rates set out in the Labour Code; wages for basic paid annual leave; state social insurance, supplementary compulsory pension insurance and National Health Insurance Fund; the cash wage referred to in Article 40(5) of the Social Assistance Law are provided for the duration of the employment; 70% of the first three working days of temporary incapacity for work.

Part-time employment. The aim of the measure is to create jobs to provide employment for up to 6 months for unemployed part-time workers for a period of 12 months. The subsidies for the employer come from the state budget.

Employment of unemployed persons by employers - micro-enterprises. The aim of the measure is to encourage employers-micro-enterprises, for the first five jobs created, where unemployed persons are employed, the state budget covers their wages up to 150 euro (for a maximum period of 6 months). In this way, the unemployed can cooperate in a micro-enterprise and receive serious support. In addition, the measure subsidizes: - additional wages at the minimum rates laid down in the Labour Code; wages for basic paid annual leave.

Employing unemployed people in green jobs. The aim of the measure is to provide employment to unemployed persons (with continuously maintained registration for not less than 6 months) in green jobs in economic activities related to the production of goods and services supporting environmental protection. The following items are eligible for subsidy: wages, amounting to 150 euro; additional wages at the minimum rates laid down in the Labour Law; wages for basic paid annual leave under Article 155 or Article 319 of the Labour Law; the cash remuneration under Article 40(5) of the Social Security Law; 70 % of the first three working days of the temporary incapacity for work. The subsidy period shall be up to 6 months and not more than 8 months for posts requiring a third professional degree or a higher education degree.

Hiring early retirees between the ages of 50 and 64. The aim of the measure is to provide employment to persons between 50 and 64 years of age registered with the Directorate of the Labour Office who have acquired the right to an occupational pension for early retirement for a period of 12 months. The subsidy is indirect because it is directed at the employer, who does not pay the contributions to the Social Insurance Institution, the State Social Insurance Institution and the National Social Insurance Institution, as well as the remuneration for basic paid annual leave under Article 155 or Article 319 of the Labour Law and the remuneration under Article 40(5) of the Social Insurance Law, in accordance with Article 6(3) of the Labour Law. In addition, however, the employee here has the option of training to acquire a vocational qualification in up to 150 euro.

Plans for new jobs through public or private investments

The plans for new jobs through public and private investments in response to the impact of the energy transition on the workforce are based on the employment strategy 2021 -2030 and the are:

- Increase in the economic activity of the population as a result of measures to activate the potential labor force (inactive persons, people with disabilities, pensioners, non-working for personal or family reasons, seasonal workers, etc.); support for combining personal and professional life, flexible employment, part-time employment, maintaining the labor activity of persons of retirement age, etc.;
- Development of forms of work and growth of employment in activities that do not depend on factors such as seasonality, epidemic situation, deterioration of international relations, etc. of this genus; ensuring more attractive pay and work conditions;
- Changes in the admissions plan for education to more fully adapt to the demand for labor force; for the unemployed - advance training and training at the request of employers; training for employees; import of labor from third countries; securing the necessary funds from the state budget, training employed and unemployed persons to acquire the skills sought by employers, including advance training, mass training of the population to acquire digital skills;
- Conducting information campaigns among Bulgarians living abroad about the opportunities for professional realization in Bulgaria, encouraging the return of highly qualified personnel after training or working in other countries;
- Ensuring employment, including for municipalities, to reduce poverty in small settlements and rural areas, ensuring faster transitions from inactivity to employment, including with the tools of social assistance;
- Removing barriers to active job search caused by poverty, poor health and poor living conditions;

- More efficient distribution and use of human resources with redirection to better quality and more productive workplaces, both by providing high-tech equipment and implementing new technologies, and by improving skills and motivation for work, training managers, etc. . In the short term, by supporting the geographical and occupational mobility of the workforce, labor market demand can be met, but in the long term, the answer to the declining number of the workforce lies in increasing labor productivity;
- Development of analytical and forecasting activities regarding labor market processes, development of legislation to regulate changes in labor relations, to preserve employment during crises and disasters, as well as ensuring social security for those working in new forms of work - mobile work in information and communication technologies, working with vouchers, from a distance, etc.

**CONCLUSION**

***Employment opportunities in the energy sector and related sub-sectors.*** There are a number of alternatives for the inclusion of the exempted coal mines and related emmergy capacities in a consequent restructuring of the energy sector in response to the new European challenges. Some of these alternatives are seen in a number of related sectors that have the potential to absorb the released workers, namely - the reclamation of coal mines; the development of the renewable energy sector; the development of the thermal energy sector; the development of the energy efficiency sector; the development of agriculture and aquaculture as a source of bio-energy.

The reclamation of coal mines. Open-pit mines are exposed wounds in the earth's surface, which are often tens or hundreds of square kilometers in size, traditionally developed over tens of years - the Maritsa East mines, for example, cover an area of 240 square kilometers. When a mine ceases operations, the site is reclaimed: the earth is backfilled; leakage of toxic chemicals to groundwater and rivers is ensured; and it is reforested with vegetation. These are tasks that can sometimes prove no less challenging than the mine development itself. These are also activities that would provide employment for many people, including mine workers, after their phased closure. The problem of managing the old tailings dumps scattered around Bulgaria and the substances hidden in them provide good job opportunities for people with experience in the mines. An underestimated niche in our country is the low-energy, relatively slow biotechnological processing of otherwise unprofitable ore concentrates - also within the competence of mining specialists. Bioleaching uses bacteria and fungi to extract cobalt, nickel, magnesium, zinc, etc., from tailings.

The development of the renewable energy sector. Studies in the US show that investment in renewables brings 40% more jobs than the same investment in coal. At the same time, there is a debate in Bulgaria that coal is a domestic resource, and wind turbines and solar panels are mainly imported from abroad, thus supporting foreign economies. To a large extent, this is a deliberately imposed myth - there is the production of photovoltaics, solar panels for hot water and heating in Bulgaria, and biomass boilers; insulation materials and energy-saving windows are produced. A large share of the funds from these industries and activities remain in the Bulgarian economy and create more jobs with the potential for more even distribution across the country. Renewable energy and energy efficiency technologies can be applied where they are needed - they are small in size, and different in concept and technical

implementation. These technologies can provide employment for differently skilled workers, from installers to engineers. Even in larger-scale technologies such as wind turbines, Bulgaria has the potential to produce many of the components needed to manufacture and maintain them. The renewables sector has the potential to employ an additional 15,000 people in the coming years if there are no administrative barriers to this. Opportunities to create new jobs jobs in energy efficiency are even greater.

The development of the thermal energy sector. According to data in the Partnership Contract for the new EU programming period 2014-2020, around 40% of buildings are heated with electricity, compared to a European average of 11%. This is an unjustified waste when it comes to coal energy. It should be noted that when coal is burned in a CHP plant, only about 30% of the energy produced is converted into electricity, the rest escapes through the chimney as hot steam. At the next stage, almost half of this electricity is lost in transmission via transmission lines, from the point of generation to the distribution network of the end customer, where it is converted into heat for heating. The last stage is also carried out with large losses, as is the case with every change of energy carrier. Many modern forms of renewable energy offer a solution to precisely this problem - producing heat when and where it is needed. Solar collectors for domestic hot water can provide all the hot water a household needs for at least 6 months of the year. Even in the colder months this technology can provide benefits and reduce the need for reheating water. Technologies are also available that can cover the needs of industrial plants. Installers are most often small local companies where individuals exempt from coal mining or conventional energy could be retrained and employed. Climate adaptation will require technologies in the field where they are needed, rather than the current ones transporting resources and products over great distances. In this sense, by 2030, community/municipal hydronic heating projects buffer and seasonal heat storage, will be the standard in this country as well, and these simple systems require specific activities such as excavation planning, securing, and excavation all areas of expertise for coal engineers and workers.

The development of the energy efficiency sector. Energy efficiency is another area that promises employment - in 2005 Bulgaria adopted a national programme for the renovation of multi-family residential buildings, which provides for the renovation of 680 000 homes in panel buildings by 2020. The aim is to create new jobs in EE and to compensate for existing jobs in decommissioning coal-fired plants. In 2015, it was announced that the National Programme for Energy Efficiency of Multi-family Residential Buildings would provide half of  billion euro, to be provided by the Bulgarian Development Bank. In contrast to Bulgaria, the Czech Republic has implemented two schemes for financing building renovation with national and EU funding and using emissions trading funds, resulting in around 26,000 jobs were created - roughly the same as the entire coal sector and the entire electricity generation sector in Bulgaria. On the basis of comparative analyses and expert estimates, it can be stated with reasonable accuracy that the number of people employed in the implementation of the activities of the First National Energy Efficiency Action Plan amounts to no less than 2 500 employees and workers.

The development of agriculture and aquaculture as a source of bio-energy. Aquaculture for the cultivation of algae, shrimp, and fish in natural or artificial ponds is an opportunity for several partnerships to cooperate. Cultivation of certain species of fish, such as the representatives of the ancient species Tilapia, does not require much-sophisticated apparatus, food mixtures, and pretentious conditions, making them convenient for starting small-scale production.

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