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Radioactive waste and social acceptance

Petyo Bonev*, Kaloyan Ganev**, Ralitsa Simeonova-Ganeva**

Despite the enormous public and political importance of nuclear energy in Bulgaria, the problems related to the management of radioactive waste generated by the operation of Kozloduy NPP are not sufficiently reflected in the media and political debates. Practically all the solutions for the storage of this waste, applied so far in the world and in Bulgaria, are of a temporary nature. There is a scientific consensus that from an economic point of view, as well as from a security point of view, these temporary solutions are not optimal. Optimal security and economy would be achieved by a long-term solution, namely so-called deep geological disposal. Globally, the political postponement of solving this problem is mainly due to several factors, including the degree of public acceptance and the existence of local resistance of the "*Not In My Backyard*" type.

The development of nuclear energy is inevitably linked to the long-term solution of the problem of storage of this waste. The identification of a location for a geological disposal repository will raise the issue of local community acceptance. This analysis considers the results of a model based on public choice principles that provides a basis for a democratic solution to the problem. The approach used combines a local referendum and various economic incentive options: monetary compensation, infrastructure improvements, stimulating the local economy, etc. The results are validated through a carefully constructed scientific experiment.

* Agroscope and University of St. Gallen, member of the Council for Economic Analysis;
** St. Kliment Ohridski, members of the Council for Economic Analysis.

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The use of nuclear power for civil purposes is considered by many experts to be a major substitute for fossil energy sources such as gas and coal.[1] After a decade of relative disrepute, within the last year nuclear power has regained its public and political acceptance. The main reasons for this renewed interest are the energy crisis triggered by Russia's invasion of Ukraine, and the need to implement urgent measures in the context of emerging adverse climate developments. The European Commission's declaration of nuclear power as the green energy of the energy transition was a highlight of the process.[2]

Bulgaria is one of 12 European Union member states[3] that have nuclear power plants. Traditionally, the Bulgarian population has been positive towards nuclear power for civil purposes - over 65% approve of its use, with only 7% strongly opposed to its development in Bulgaria.[4] The country ranks among the top in Europe for approval, along with countries such as France and Sweden. At the same time, 84% of people are informed by the media about the development of the nuclear sector in Bulgaria.[5]

With such a high public and political importance of nuclear energy, it is somewhat surprising that radioactive waste issues do not find sufficient coverage in the media and political debates in Bulgaria.[6] It should be noted that, unlike conventional municipal and industrial waste, radioactive waste (RAW) requires special storage and monitoring as some of it is highly radioactive and remains so for hundreds, even thousands of years.

Currently in Bulgaria, as in all other countries storing radioactive waste, the respective repositories are of a temporary nature. There is a scientific consensus that, from an economic as well as a safety point of view, these interim solutions are not optimal. Specialized analyses of high-level waste indicate that the long-term solution providing the necessary safety is so-called deep geological disposal - a repository built hundreds of meters below the ground surface, which is sealed when capacity is reached.[7] At the same time, the experience of other countries shows that plans for such permanent repositories can provoke strong opposition from the local population. In some cases, such resistance has led to the cancellation of such projects.

In this context, the following questions arise: how would the local population of a given region in Bulgaria react to possible plans to build a permanent repository in the region? Is there a democratic process to legitimize a chosen location? Can the degree of public acceptance within a democratic process of site selection be increased by providing economic incentives to the local population? Unfortunately, the problem of public acceptance of radioactive waste has been understudied worldwide and virtually unexplored in Bulgaria.

The purpose of this analysis is to provide at least partial answers to the questions posed above. The focus is on the public acceptance of radioactive waste and the democratic processes that would lead to the formulation and implementation of a successful strategy.

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[1] The Discreet Charm of Nuclear Power (The Economist, 13.11.2021). Available at: https://www.economist.com/leaders/2021/11/13/the-discreet-charm-of-nuclear-power.

[2] Nuclear Energy | Fact Sheets on the European Union | European Parliament (europa.eu). Available at: https://www.europarl.europa.eu/fact-sheets/en/sheet/62/nuclear-energy

[3] Bulgaria, Belgium, the Czech Republic, Finland, France, Hungary, the Netherlands, Romania, Slovakia, Slovenia, Spain and Sweden.

[4] According to an opinion poll conducted by Trend Agency between February 4-12, 2023.

[5] Ibid.

[6] It is important to underline that in Bulgaria policies and decisions have been taken and implemented regarding the safe management of spent nuclear fuel (SNF) and radioactive waste (RAW) contained in: The National Strategy for the Management of Spent Nuclear Fuel and Radioactive Waste; Bulgaria's National Reports on the implementation of obligations under the Single Convention on the Safe Management of Spent Nuclear Fuel and Radioactive Waste; the 2018 International Atomic Energy Agency (IAEA) ARTEMIS Peer Review Report (in relation to Article 14 of EU Council Directive 2011/70/Euratom establishing a European Community framework for the responsible and safe management of spent nuclear fuel and radioactive waste); and the annual reports of the Nuclear Regulatory Agency, the Radioactive Waste State Enterprise, Kozloduy NPP and the Ministry of Energy.

[7] Besnard et al. (2019).

Radioactive waste and the problem of its long-term storage

Radioactive waste is generated at various stages of the civil use of nuclear energy, including uranium mining, yellowcake milling, enrichment, fission reactions, spent nuclear fuel (SNF) management, and the final decommissioning of a nuclear reactor.[8]

Broadly speaking, radioactive waste is divided into low-, intermediate- and high-level radioactive waste, and the International Atomic Energy Agency (IAEA) further differentiates between them by the duration of their radioactivity.[9] High-level waste is characterized by high beta and gamma activity, significant alpha-emitter content and high radiotoxicity and heat release. This implies that they must be effectively isolated for hundreds of thousands of years. Some countries do not consider spent fuel to be radioactive waste because of its reprocessability. This is the case in Bulgaria.[10] However, the unusable by-products that remain after reprocessing are still highly radioactive and should therefore be treated as high-level waste. According to studies, high-level waste accounts for about 3% of the total waste volume, but it accounts for about 97% of the radiation generated.[11]

Initially (in the early 1950s), radioactive waste around the world was dumped directly into nature.[12] For example, solid waste was dumped into rivers and seas,[13] and in some cases high-level spent fuel was buried on the grounds of military laboratories without additional precautions.[14] As knowledge of the negative impacts of these practices accumulates over time, the search for long-term sustainable solutions to radioactive waste disposal is also beginning.[15]

Modern science considers several options for long-term storage to be possible and feasible, where the type of waste (low-, medium- or high-level) is crucial:

- Landfill-like disposal: this option is primarily suitable for the lowest radioactive waste.
- Underground storage near the surface in specially adapted "trenches" suitable for low-level waste.
- Storage in special underground facilities tens of meters underground, suitable for intermediate level waste.
- Deep geological disposal in special galleries located in the earth's crust hundreds of meters below the surface. This option is also considered the most reliable as far as high-level waste is concerned. In the presentation that follows, special attention is paid to this type of solution.

Choosing a location for long-term storage

Practically all solutions for high-level waste storage currently applied in the world and in Bulgaria are of a temporary nature. Depending on the type of waste, these temporary solutions are pools, dry storage or containerized dry storage systems. Such solutions are characterized by an increased risk of accidents.[16]

According to data from 2019, about a dozen European countries have and have started to some extent the implementation of programs for long-term storage of high-level waste in a geological disposal

[8] Besnard et al. (2019).
[9] The classification of RAW introduced under the Safety of Radioactive Waste Management Regulation is in full compliance with IAEA recommendations.
[10] This is regulated in the Law on the Safe Use of Nuclear Energy.
[11] Besnard et al. (2019).
[12] Besnard et al. *op. cit.*
[13] Jones et al. (2001).
[14] Pearce et al. (1960).
[15] Unconventional solutions, which are today beyond the focus of modern science and practice, such as launching a rocket into space and burying it deep under the ocean or sea floor, are also being considered early on. For more information, see e.g. MacKay (1973), Hollister, Anderson and Heath (1981).
[16] Besnard et al, *op. cit.*

facility, Bulgaria is not among them.[17] No country has yet implemented long-term storage of high-level waste, and the first country to commission a deep geological repository appears to be Finland (Table 1).

Identifying a potential geological repository site is a complex issue with geological and socio-economic aspects.

First, it is necessary that the rock mass has a low permeability. This prevents the ingress of radioactive substances into the groundwater in the event of damage to the containers and prevents water from entering the repository. Rocks with this property are, for example, so-called *montmorillonites*. Secondly, the repository needs to be in an area of low seismic activity, as more serious earthquakes could damage it. Third, it requires that the repository be accepted by the local population.

The experience of other countries shows that public acceptance[18] proves to be the most difficult challenge to overcome in the choice of location. A detailed discussion of the democratic process involved in public acceptance of such a repository is provided below.

1. Country programmes for long-term storage of high-level waste in deep geological repository

Country	Type of waste	Choice of location: status, period	Underground research lab	Construction permit	Timeframe to repository license
Belgium	SNF, HLW, TRU	Location appointed	Hades	-	Not scheduled
Czech Republic	HLW	Action taken, 1990-2015*	None	-	2065*
Finland	SNF	Location appointed, 1985-2000	Onkalo RF	2018	2024*
France	HLW, TRU	Location appointed	Bure, Tournemire	2020*	Not scheduled
Germany	SNF, HLW, TRU	Action taken, 2017-2031*	None	-	2050*
Hungary	SNF, TRU	Action taken, 1995-2030*	Pecs	-	Not scheduled
The Netherlands	SNF, HLW	Deferred	None	-	-
Spain	SNF, HLW	Deferred	None	-	Not scheduled
Sweden	SNF, HLW	Location appointed, 1980s-2009	Aspo	Ongoing	Not scheduled
Switzerland	SNF, HLW, TRU	Action taken, 2008-2030*	Mont-Terri	-	2060*
United Kingdom	HLW, TRU	Action taken, 2008	None	-	Not scheduled

Legend: *, estimate; HLW, high-level waste; SNF, spent nuclear fuel; TRU, transuranic waste.

Source: Own compilation based on Besnard, Manon, et al. (2019)

The situation in Bulgaria[19]

The generation of radioactive waste in Bulgaria dates to 1961, when the research reactor at the Institute for Nuclear Research and Nuclear Energy of the Bulgarian Academy of Sciences was put into operation. Radioactive waste from nuclear power has been generated since 1974. At present, such waste is generated at various industrial, medical, agricultural and research institutes using sources

[17] According to information from NPP, a partner mission under the IAEA (ARTEMIS mission) was implemented in 2018, as a result of which the process of construction of the Geological Disposal Facility (GDF) was initiated. An inter-ministerial working group has been set up and work has started on the update of the strategy for spent fuel and radioactive waste management in Bulgaria (in accordance with Directive 2011/70/EWRATOM). In parallel, consultations have been launched with a number of municipalities in the country, the Regional Environment Agency and the Ministry of Finance. In early 2024, the Task Force has submitted summary recommendations and comments to the Minister of Energy for approval and subsequent submission to the National Assembly. To date, a concept for the HPP has been formulated in Bulgaria, with the start of operation foreseen for 2050.

[18] Some analyses view public acceptance as a sustainability issue that is invariably linked to the nuclear fuel cycle, pointing out that public acceptance can be treated as a resource. See, e.g., Nuclear Energy Agency, OECD (2001).

[19] The description here is based on the following documents: 1) the reports of the Republic of Bulgaria on the implementation of the requirements of Directive 2011/70/EWPRTOM establishing a framework for the responsible and safe management of spent fuel and radioactive waste, 2) the Nuclear Regulatory Agency's Annual Report 2022; 3) the Seventh National Report of the Republic of Bulgaria on the implementation of the obligations of the Republic of Bulgaria under the Single Convention on the Safety of Spent Fuel Management and on the Safety of Radioactive Waste Management and 4) the Deiss

of ionizing radiation (nuclear applications), with the Kozloduy NPP generating over 95% of it.[20]

Radioactive waste shall be stored according to its type and origin. Radioactive waste generated outside Kozloduy NPP (e.g. generated in medical applications) is accepted for permanent storage in the storage facility for RAW from nuclear applications at Novi Khan.

Radioactive waste generated from the operation of Kozloduy NPP is stored in the facilities for the treatment and storage of RAW on the NPP site.

Spent nuclear fuel[21] is an unavoidable technological product of nuclear power generation. Spent fuel (a highly radioactive component), which is generated by the two reactors in operation (Kozloduy NPP Units 5 and 6), is stored in reactor basins and in the NPP's own wet and dry SNF storage facilities on site. A certain amount of spent nuclear fuel from the four reactors shut down so far at Kozloduy NPP is stored in its own wet and dry storage facilities on the same site.

Low- and intermediate-level short-lived radioactive waste is to be disposed of in a so-called "National Radioactive Waste Repository", which is currently under construction. In the meantime, this type of RAW is stored (in appropriate packaging) in a separate RAW management facility on the Kozloduy NPP site. Responsibility for the safe management of this waste, as well as for the construction of the repository, lies with the State Enterprise Radioactive Waste (SE RAW).

There are no domestic plants for the conversion, enrichment, reprocessing and production of nuclear fuel in Bulgaria. Bulgaria does not have the capability to implement a complete nuclear fuel cycle. All the solutions implemented are temporary and have always been so, and the facilities in operation have limited capacity. A long-term solution for the permanent storage of high-level waste (such as a deep geological repository) has not yet been put into practice.

The most important institutions in Bulgaria involved in the management of RAO are the Council of Ministers, the Ministry of Energy, the Nuclear Regulatory Agency (NRA), Kozloduy NPP and SE RAO. A national infrastructure - legislative, regulatory and organizational - is in place. The regulation of the safe management of radioactive waste and spent nuclear fuel is entrusted to the Nuclear Regulatory Agency, which is an independent competent state authority. Currently, the overall management of RAW is carried out within the framework of the current national program (Strategy for the Management of Spent Nuclear Fuel and Radioactive Waste until 2030).

The regulation of the activities on the safe management of SNF and RAW and the provision of nuclear safety and radiation protection in the country is carried out in accordance with the Law on the Safe Use of Nuclear Energy (LSAE) and its implementing regulations and in accordance with the IAEA recommendations.[22] The policy, principles, decisions and milestones for the safe management of SNF and RAW in the long term are defined in the National Strategy for Spent Nuclear Fuel and Radioactive Waste Management,[23] and a new updated strategy with a horizon up to 2050 is currently being drafted. In accordance with national legislation, geological disposal on the territory of the Republic of Bulgaria is the most appropriate option for permanently

[20] Within the uranium industry in Bulgaria, more than 40 mining sites and two hydrometallurgical plants were operated, and the uranium raw materials were exported for further processing outside the country (the former USSR). The waste materials generated by this industry are disposed of at designated sites in the country. Uranium mining was terminated by decision of the Government of the Republic of Bulgaria in 1992. The management of facilities and activities related to former uranium mining and ore processing in Bulgaria now includes radiation monitoring and remediation works, which are related to former uranium mining sites, tailings dumps and plants for the treatment of uranium-contaminated water and regeneration of ion exchange resins from these plants.

[21] Spent fuel is not categorized as RAW, but may be treated as such in the long term from a storage perspective.

[22] The national legislation in the area also includes the Environmental Protection Act (EPA) and its implementing regulations, as well as the Access to Public Information Act, the National Security Agency Act (NSAA), the Ministry of Interior Act (MOIA), the Health Act (HA) and the Spatial Planning Act (SPA), which are relevant to the management of SNF and RAW in Bulgaria.

[23] The strategy is in line with the requirements of EU Council Directive 2011/70/Euratom establishing a European Community framework for the responsible and safe management of SNF and RAW.

ensuring the safety of the isolation of high-level and long-lived radioactive waste.

Also, Bulgarian legislation guarantees public access to information at the earliest possible stage of any project related to SNF and RAW management (facilities for reprocessing, disposal and storage of RAW and facilities for storage of SNF). This shall be done through a process of mandatory public consultation in accordance with the Environmental Protection Act and the Regulation on the conditions and procedure for carrying out environmental impact assessments. Participation of all interested parties is ensured through mandatory disclosure of investment intentions in the media and public invitations to public consultations. In addition, persons carrying out spent fuel and radioactive waste management activities shall provide objective information to the public, public authorities and public organizations on the state of nuclear safety and radiation protection.

The "*Not In My Backyard*" problem and the acceptance process

Once the list of possible locations for geological repositories has been developed, the issue to be addressed is one of political legitimation, i.e. how the local community is involved in the decision-making process regarding the exact location of a repository. The current strategy in Bulgaria[24] lays down two main principles for radioactive waste policy - transparency and public participation.

These democratic principles require that the following conditions are satisfied. Firstly, it is the right of citizens to know what risks they are exposed to. Secondly, they have the right to determine, albeit indirectly, which risks are to be taken. There is also a psychological aspect - the fear of radiation, which, according to many it experts, does not correspond to the real risk.[25] Last but not least, a number of economic analyses have shown that the proximity of radioactive waste repositories leads to a reduction in property values.[26] This is an economic argument that further justifies the right of citizens to be informed and to participate in decisions on the construction of repositories.

Notwithstanding the above fears, economic arguments, etc., in the presence of RAW, finding solutions related to its long-term storage is inevitable and urgent. The problem has two dimensions - temporal and spatial.

The first relates to whether the costs should be borne by the present generation or passed on to future generations. This aspect partly explains the political postponement of the issue for several decades now. However, there is also a strategic reason for this postponement. There is still a lack of accumulated global experience on the details of implementing long-term storage solutions. It is all too likely that the countries that succeed in building such facilities first will face unexpected problems and costs. In this sense, those countries that adopt a wait-and-see attitude with a view to using the experience gained could optimize costs and risks, thereby also realizing significant savings. However, the pursuit of such a strategy by all countries would only exacerbate the problem and make it more intractable.

Regardless of which generation bears the costs and consequences and when, the question of location and appropriate compensation for the risks borne by the local population is of paramount importance. Several alternative approaches to public choice are considered here, differing in their degree of democracy.

[24] Strategy for spent nuclear fuel and radioactive waste management until 2030.
[25] For example, the results of a telephone interview in which the question was asked, "What is the minimum distance you would like to live from a nuclear waste repository?" indicate that the required distance is on average 200 miles. (Flynn et al., 1990) This distance is between 3 and 8 times greater than the distance required for facilities similar in magnitude of risk, such as nuclear power plants and pesticide factories.
[26] Feinerman et al. (2004).

Option 1: The decision is taken centrally by a legislative act of the authorities.[27] The population is informed afterwards. Due to the lack of public participation, this procedure has a low degree of democracy and may lead to an erosion of public trust in the institutions. The experience of other countries (USA, Australia, Germany) also shows that this approach can lead to significant public disruption, accompanied by protests and blockades by the local population. Resistance of this type is summarized in the economic literature as '*Not In My Backyard*' (NIMBY). Examples of such resistance are the protests in Ruse and Giurgiu against plans to build a medical and animal waste incineration plant in Giurgiu.

Option 2: The decision is made by a national referendum once the location has been determined. This is also the option that has been applied in Switzerland - the location chosen for long-term storage is not far from Zurich, and a national referendum is planned to take place in the next few years. This option is in some ways more democratic than Option 1. However, it does not solve the problem of local community opposition, as a decision taken by national referendum may contradict local community opinion, leading to a democratic deficit like that of Option 1.

Option 3: Once the location has been determined, the owner of the RAO offers compensation to affected citizens and businesses.[28] If the owner is the state, this could also take the form of a tax rebate - for example, an exemption from paying taxes for the next 20 years. Next, a local referendum is held in which only those living in the municipalities in the immediate vicinity of the chosen location participate. In the event of a negative vote in the referendum, the waste owner can increase the proposed compensation or move to a new location. Because of the way the compensation is offered, this option is called the 'political market'. Since the location of the repository is determined with the direct participation of potentially affected citizens, the political market is considered the most democratic option.

Although Option 3 is characterized by the highest degree of democracy, it is not easy to implement. One of the main questions that arises in its context is the following: what should be the amount of compensation so that most citizens give their consent in a local referendum? It is reasonable to expect that if the compensation is too small, then most residents will continue to oppose the construction of a repository.

At the same time, there are studies that show that the higher the proposed compensation, the more skeptical citizens become and the more likely they are to vote against a storage facility near them.[29] One of the drawbacks of this type of research is that it often exhibits so-called framing effects, i.e. responses are influenced by the design of the experiment itself.

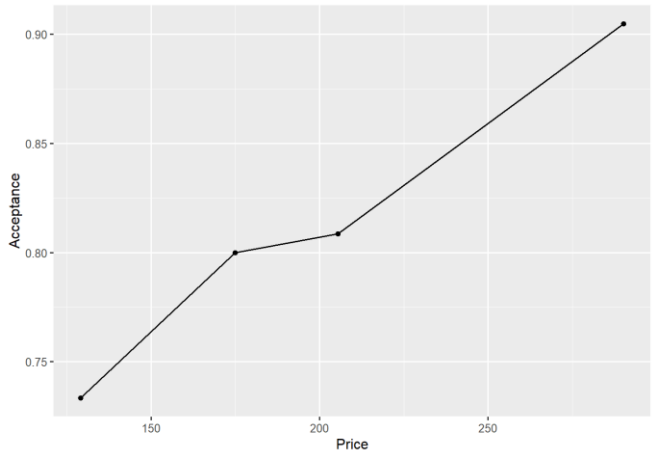
To overcome issues of this type and more accurately measure the role of compensation in social acceptance, we and colleagues developed a controlled experiment design in which we used four versions of the questions asked. We conducted the experiment in 2022 with participants from three countries, Switzerland, Bulgaria and Sweden, and each participant was randomly assigned to only one version of the questions.[30]

Social acceptance of radioactive waste - empirical results

Decisions on the long-term storage of RAW are invariably linked to the needs of the economy in the short, medium and long term and are fully consistent with the obligations arising from the European regulatory framework. In addition to these

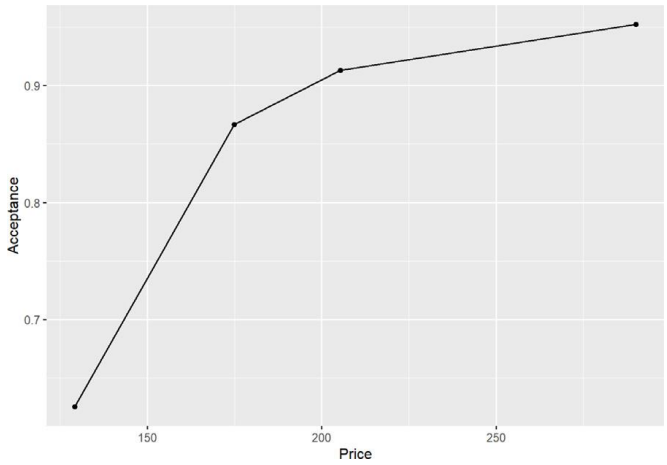
[27] This option is in line with the current normative practice in Bulgaria: a decision for the construction of a national centralized facility for the disposal of RAW is taken by the Council of Ministers, in accordance with Article 74, subparagraphs 3, 4 and 5 of the NWLEA, as this type of facilities are of national importance within the meaning of § 5, item 62 of the additional provisions of the Spatial Planning Act.
[28] The idea of this mechanism was developed by Mitchell and Carson (1986).
[29] See, for example, Frey and Oberholzer-Gee (1997).
[30] Bonev et al. (2024).

2. Spot electricity prices in euros (Price) and approval rate of new nuclear build (Acceptance) in Sweden



Source: *Bonev et al. (2024)*.

3. Spot electricity prices in euros (Price) and percentage of approval to build a radioactive waste repository (Acceptance) in Sweden



Source: *Bonev et al. (2024)*.

considerations, the degree of public acceptance of these decisions should also be considered.

The results of our experiment show that in a genuine referendum, the development of new nuclear power capacity would most likely be supported by a solid majority (66.9%). At the same time, if, when asked, this development also requires the construction of a radioactive waste repository nearby, the approval turns out to be lower (60.4%). The latter is primarily due to the insufficient degree of public awareness of RAW and sets the share of so-called gracefulness (free riding) among those supporting nuclear power at approximately 10%.

If a referendum were held only on the construction of a radioactive waste repository nearby, then the approval rate would be even lower (54.8%). If, in the same type of referendum, a proposal for a fixed monetary compensation were added to the wording of the question, then approval would increase by approximately 10%. Therefore, it can be expected that economic incentives would increase the willingness to approve an underground repository for RAW nearby.

Interestingly, the new nuclear facilities have higher approval among women (70.5%) than men (61.7%). At the same time, there is a higher level of approval of radioactive waste repositories among men (62.1%) compared to women (47.4%). This means that overall, men have similar levels of approval of both new nuclear facilities and RAW repositories. For women, there is a significant difference in approval of nuclear facilities and repositories, suggesting that "*Not in my backyard*" type opposition is much more pronounced and largely defined by the female portion of the population.

There is a positive relationship between the price of electricity (spot price per MWh) and the proportion of participants in the Swedish experiment who approve of a radioactive waste repository nearby. The higher the electricity price, the higher the percentage approving the construction of a repository (Figures 2 and 3). Therefore, the price of electricity could also be interpreted as an economic incentive: high volatility and high price increase the economic importance of producing one's own nuclear power. This in turn could be interpreted as compensation for the presence of RAW in the vicinity.

Main conclusions and recommendations

Nuclear power is seen by many experts and institutions as a potential solution to the climate change crisis, including the European Commission. The level of approval of nuclear energy by the population in Bulgaria is high. However, there is limited awareness of radioactive waste. The level of awareness of the risks associated with both

temporary and long-term storage of this waste is also low. There is a lack of understanding of the role of deep geological disposal of this waste, whether the repository is relatively close or relatively far away.

The current strategic document for spent nuclear fuel and radioactive waste management in Bulgaria shows a high level of expertise and commitment of the relevant institutions in compliance with all international requirements and standards. Concrete decisions towards long-term storage of spent nuclear fuel and high-level waste are still to be taken.

Approval of the construction of nuclear power generation facilities is 22% higher than that for the construction of radioactive waste repositories. Thus, the acceptance rate of RAW appears to be a deterrent to public approval of nuclear power.

The identification of a location for an underground repository is expected to inevitably raise the issue of local community acceptance. In turn, this implies the choice of a democratic approach to implement this public choice. The most democratic approach known in international practice is the local referendum.

Raising the level of approval of underground storage could be achieved using different options of effective economic incentives.[31] In view of the gender disparities identified, raising awareness of the issue and setting adequate compensation should be linked to measures that pay special attention to the attitudes and expectations of women in the local community.

Economic incentives for the local community could include, in addition to monetary compensation, improvements to infrastructure, stimulation of the local economy and local labor market, etc.[32] In practice, arguments against the construction of storage facilities for RAW should also be taken into account, such as public health risks, mistrust of state institutions, possible negative effects on the local economy, identity, etc.[33] so that adequate compensation is offered to the local population.

Raising the issue of public acceptance of the construction of underground storage facilities for radioactive waste to the public is also linked to addressing the already existing problem of decade-long interim storage of this waste. The future development of nuclear power is inevitably linked to the solution of the problem of the storage of RAW.

The issues raised also raise several additional but related questions concerning the long-term storage of other hazardous wastes generated by traditional and modern technologies used in energy, industry and other sectors of the economy.[34]

The Council for Economic Analyses prepares independent analyses and opinions on individual issues concerning the state of the Bulgarian economy, the challenges and risks it faces, as well as possible policies and recommendations to address them.

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[31] Such economic incentives are already applied in Bulgarian practice in a specific form. At present, Kozloduy Municipality receives a significant additional financial incentive to the main budget every year without any spending limit. A similar example is the municipality of Elin Pelin and the town hall of. Novi han. It is envisaged to maintain this practice when selecting a site for the construction of the HPP.
[32] Wolsink (2006).
[33] Kraft and Clary (1991); Wolsink (2010).
[34] In the implementation of new technologies and developments, the NPPIA explicitly provides for the obligation to apply systems and equipment, technologies and procedures consistent with the state of the art of science and technology and internationally recognized operational experience.

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