

# Public Opinion Survey on Nuclear Energy and Radioactive Waste Management 2026

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## ABSTRACT

During the beginning of 2026 the Department of Applied Physics of the Faculty of Electrical Engineering and Computing, University of Zagreb conducted a public opinion survey on nuclear energy and radioactive waste management primarily among student population but also partially seizing general population. The survey is a continuation of previously conducted surveys which enables comparison of participants' positions and analysis of trends. Considering the recent political agenda in Croatia, a set of questions aiming at Small Modular Reactors (SMR) and their potential application in Croatia was added to the survey.

**Keywords:** *public opinion survey, nuclear energy, radioactive waste management, small modular reactor (SMR)*

## 1 INTRODUCTION

Global interest in nuclear energy is increasing since electricity production in nuclear power plants is regarded in many countries as a reliable and low-carbon source. In March 2026 the second Nuclear Energy Summit was held by the Government of the French Republic in Paris [1]. Heads of State and Government, heads of international organizations, financial institutions, industry representatives and experts discussed the role of civil nuclear energy in addressing major energy and climate challenges aiming to strengthen international cooperation and encourage new initiatives and partnerships among countries, organizations, financial institutions and industry. Croatian prime minister also attended that summit expressing the relatively new position of the Croatian government which recognizes nuclear energy as a viable option for future Croatian energy mix.

Croatia is a specific nuclear country with 50% ownership of the nuclear power plant (NPP) located in neighbouring country. NPP Krško was built as a joint venture of the Croatia and Slovenia while both countries were part of the former Yugoslavia. The second built of a NPP in Croatia was also foreseen at that moment. Due to Yugoslavian inner political reasons that second construction was abandoned, and shortly after, in 1991, both countries proclaimed independency. Since then new nuclear power plant has not been seriously considered as a realistic option for Croatian energy system. However, in February 2025 a Working Group for Nuclear Energy was established by the Ministry of Economy with representatives of the Ministry, nuclear energy experts from the academic community, state institutions and the industry. That was the beginning of strong increase of government interest in nuclear energy in Croatia.

Pursuing a nuclear programme is a long term political and economic commitment, placing heavy burden on entire society and requiring cooperation of all stakeholders (media, universities, local community, industry, employees, workers' unions, suppliers, government, non-governmental organizations, international community, and scientific community) [2]. One of the key elements of the successful nuclear programme is the public support.

Therefore, the main goal of this paper is to analyse the public support for nuclear energy in Croatia but also addressing public position towards radioactive waste management as unavoidable activity of any serious nuclear buildup. To address relatively strong orientation of the Croatian political and expert community towards SMRs observed during the last year particular focus of the public opinion survey was placed on issues related to SMRs.

The methodology applied in the research is described in Section 2. Survey results are presented in Section 3, followed by discussion in Section 4 and the conclusion in Section 5 also briefly addressing possibilities for future research.

## 2 METHODOLOGY

Research group from the Department of Applied Physics of the Faculty of Electrical Engineering and Computing, University of Zagreb is conducting public opinion surveys on nuclear energy and radioactive waste management for more than 25 years accumulating knowledge on public position towards matters of interest and analysing trends. Due to practical financial and work force limitations polling methods and scope differ from year to year. In addition, sector of nuclear technology is evolving which requires modifications of survey questions. As a result of these factors direct comparison of all survey's results is not always possible and straightforward. However, a set of basic questions remained unchanged over the years enabling elementary trends to be analysed.

Overall research performed in March 2026 consisted of two separate public opinion surveys. The first one (marked as 2026-1 in Table 1) is basically a continuation of previously conducted surveys with added set of questions related to SMRs. The second survey (marked as 2026-2 in Table 1) is mostly addressing SMRs with just one "old" question enabling minimum comparison with previously conducted surveys. The questionnaires also differ in approach. The first one offers just a brief introduction into the reasons for polling and research group, while the second one provides more details of SMR technology in introductory section.

In 2016 public opinion survey has been carried out on general Croatian population [3]. Due to the comprehensive and thorough approach of that survey based on stratified sampling and face-to-face interviews, its results are often used as a reference. Main characteristics of 2016 and 2026 surveys are given in Table 1.

Table 1: Main characteristics of 2016 and 2026 public opinion surveys

Category	2016	2026-1	2026-2
Focus – majority of questions	Nuclear energy and radioactive waste	Nuclear energy and radioactive waste	SMR
Introductory section	Basic	Basic	Detailed
Participants' age	15+	15+	15+
Sampling type	Stratified sampling based on national census	Random sampling	Random sampling
Interview type	Face-to-face	Online form	Online form
Participants' main characteristics	Representative sample of the national population	Coming from continental Croatia, younger than 39, student of finished faculty education	
Total number of participants	2002	721	927
Female participants	1047	313	422
Male participants	955	408	505
Maximum margin of error (MOE) for 95% confidence level (proportion percentage of 50%) [4]	Approximately 2.2% for total, 3.2% for males, and 3.0% for females	Approximately 3.7% for total, 4.9% for males, and 5.6% for females	Approximately 3.2% for total, 4.4% for males, and 4.8% for females

It must be emphasized that random sampling and online interview type of 2026 surveys favour younger population more accustomed to Internet. Also, in 2026 surveys concentration of participants in several Croatian counties has been observed. As a result of these limitations, although comparison of the 2026 results with 2016 results is performed where possible, that comparison must be cautiously interpreted.

Both 2026 surveys had the same set of questions related to participants' general data (county of origin, gender, age, education, and employment status). The 2026-1 survey consisted of 4 sets of questions related to "Nuclear energy – general", "Nuclear energy – information", "Nuclear energy – small modular reactors", and "Radioactive waste" with the total of 14 questions. The 2026-2 survey also consisted of 4 sets of questions on "Perception of information, safety, and risk", "Economic factors and investments", "Power network and application", and "Nuclear fuel cycle and spent fuel" with the total of 20 questions.

### 3 RESULTS OF SURVEYS' ANALYSIS

Due to the vast volume of survey questions and available data, in this paper only the preliminary analyses of the key results are presented.

#### 3.1 Nuclear energy growth

In both of 2026 surveys the same question was given to the participants, asking them to express their opinion on the use of nuclear energy in relation to other sources of electricity, offering four possible answers, namely "Decrease the share of nuclear", "Retain the share of nuclear on present level", "Increase the share of nuclear", and "Don't know". The question has also been present in the of 2016 survey. Overall results are presented in Table 2.

Table 2: Comparison of participants' position towards nuclear growth for 2016 and 2026 surveys

Survey	Decrease the share of nuclear	Retain the share of nuclear on present level	Increase the share of nuclear	Don't know
<b>2026-1</b>				
<b>Total</b>	14.6%	16.9%	<b>47.2%</b>	21.4%
<b>Female</b>	22.0%	19.8%	25.6%	<b>32.6%</b>
<b>Male</b>	8.8%	14.7%	63.7%	<b>12.7%</b>
<b>2026-2</b>				
<b>Total</b>	13.4%	17.2%	<b>54.6%</b>	14.9%
<b>Female</b>	21.3%	23.0%	32.2%	<b>23.5%</b>
<b>Male</b>	6.7%	12.3%	73.3%	<b>7.7%</b>
<b>2016</b>				
<b>Total</b>	37.1%	28.0%	<b>14.2%</b>	20.6%
<b>Female</b>	35.3%	28.4%	9.4%	<b>26.9%</b>
<b>Male</b>	39.1%	27.6%	19.6%	<b>13.7%</b>

Despite of the limitations imposed on direct comparison of the results, as discussed in previous section, it is evident that the support for increase of nuclear share in energy mix substantially raised over the last 10 years. Proportional relationship of female and male opinions remained the same with females being more sceptic towards the increase of nuclear but also expressing more indecisive (Don't know) position.

It is also interesting to observe slight differences between two surveys conducted in 2026. The one containing more detailed introduction (2026-2) has less indecisive participants and larger share of support for nuclear increase.

### 3.2 Location for the new NPP construction

The second question that appeared in similar form in 2016 and 2026 surveys asked the participants to select the location for a potential nuclear power plant construction, offering four possible answers, namely “Location in Croatia“, “Location in neighbouring EU country”, “Location in neighbouring non-EU country”, and “Nowhere”. Overall results are presented in Table 3.

Table 3: Comparison of participants’ selection of location for possible nuclear power plant construction for 2016 and 2026 surveys

Survey	Location in Croatia	Location in neighbouring EU country	Location in neighbouring non-EU country	Nowhere
<b>2026-1</b>				
<b>Total</b>	<b>38.6%</b>	<b>21.9%</b>	5.7%	33.8%
<b>Female</b>	<b>19.8%</b>	<b>27.2%</b>	7.0%	46.0%
<b>Male</b>	<b>52.9%</b>	<b>17.9%</b>	4.7%	24.5%
<b>2026-2</b>				
<b>Total</b>	<b>55.9%</b>	<b>20.9%</b>	2.1%	21.1%
<b>Female</b>	<b>34.4%</b>	<b>28.0%</b>	2.4%	35.2%
<b>Male</b>	<b>73.9%</b>	<b>14.9%</b>	2.0%	9.2%
<b>2016</b>				
<b>Total</b>	<b>23.2%</b>	<b>41.0%</b>	35.8%	-
<b>Female</b>	<b>18.0%</b>	<b>44.9%</b>	37.1%	-
<b>Male</b>	<b>29.1%</b>	<b>36.6%</b>	34.3%	-

In 2016 survey the participants have not been given the possibility to select the answer “Nowhere”. Therefore, direct comparison of the 2016 and 2026 results is not possible. However, certain trends can still be analysed. The shift between two locations can be seen. In 2016 location in neighbouring EU country was ahead of the location in Croatia by approximately 18% in the overall population, while in 2026 surveys the location in Croatia is the most favoured one with more than 30% difference compared to location in neighbouring county. The difference is more noticeable in male population than in female population.

As in the previous question, there is a slight difference between two 2026 surveys. The survey 2026-2 with more detailed introduction resulted in higher selection of the location in Croatia as a possibility for NPP construction.

### 3.3 Information level

The third question present in all of the analysed surveys asked the participants to assess their level of information on the topic of nuclear power plant safety, offering five possible answers, namely “Very well informed“, “Well informed”, “Poorly informed”, “Very poorly informed”, and “Don’t know”. Overall results are presented in Table 4.

Table 4: Comparison of participants' level of information on the topic of nuclear power plant safety for 2016 and 2026 surveys

Survey	Very well informed	Well informed	Poorly informed	Very poorly informed	Don't know
<b>2026-1</b>					
<b>Total</b>	6.2%	28.2%	45.2%	17.3%	3.1%
<b>Female</b>	2.6%	16.0%	50.8%	27.5%	3.2%
<b>Male</b>	9.1%	37.5%	40.9%	9.6%	2.9%
<b>2026-2</b>					
<b>Total</b>	7.4%	30.2%	45.3%	14.5%	2.6%
<b>Female</b>	2.1%	18.2%	51.7%	24.4%	3.6%
<b>Male</b>	11.9%	40.2%	40.0%	6.1%	1.8%
<b>2016</b>					
<b>Total</b>	4.9%	24.1%	46.5%	17.0%	7.5%
<b>Female</b>	3.0%	18.9%	47.5%	21.5%	9.1%
<b>Male</b>	7.0%	29.9%	45.6%	12.2%	5.3%

Very similar results can be observed for all analysed surveys. Majority of the participants feel poorly informed on the topic of nuclear power plant safety regardless on the year and design of the survey. Out of those who assess their level of information as very well or well informed, majority are males.

### 3.4 Small modular reactors (SMR)

Small modular reactors (SMR) were not explicitly investigated in 2016 survey. However, due to recent political and technological trends SMRs were introduced in both 2026 surveys, either just in limited scope (2026-1) or in more detailed manner (2026-2). The questions that appear in these two surveys are not similar and therefore the results cannot be directly compared. Preliminary analyses of some of the questions are presented in the continuation of this subsection.

A very simple question "Have you heard of the term Small Modular Reactors (SMR)?" was part of the 2026-1 survey offering two possible answers, namely "Yes" and "No". Two thirds (66.6%) of the total number of participants answered "No", slightly more in female population (74.1%) indicating that the technology of SMRs is not widely recognized.

In March 2026 Croatian minister of economy presented new law on the development of nuclear energy for civil purposes to the Croatian Parliament. One of the articles in the law addresses eligible nuclear power plants for possible construction in Croatia as those for which "*there is a reference power plant licensed and with a construction permit in the country of the technology holder.*". In the same law reference power plant is defined as "*Reference nuclear power plant – nuclear power plant licensed and with a construction permit in the country of the holder of the technology according to generally accepted standards nuclear safety guidelines as defined by the International Agency for Atomic Energy (IAEA), Euratom and the American Nuclear Regulatory Commission (US NRC). The technology on which the reference nuclear power plant is based must be verified and successfully demonstrated at power plants that are in operation in the country holders of technology.*" [5]. To address that issue the following question was given to the participants of 2026-1 survey "Operational small modular reactors exist in Russia and China. Many other countries and companies are developing new designs for small modular reactors. Do you support the construction of a small modular reactor in Croatia that has not yet been built in any country but has the permits and it is licensed by regulatory agencies?". Four possible answers were offered, namely "Yes", "No", "I don't understand the terms used in the question.", and "Don't know". The results are given in Figure 1.

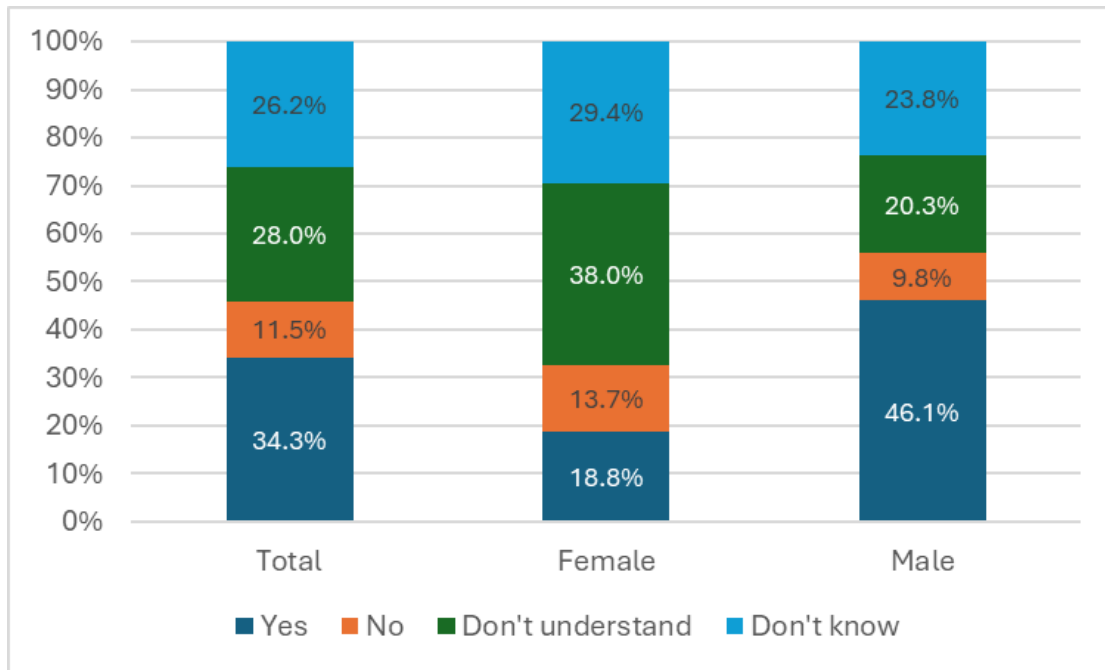


Figure 1: Results of 2026-1 survey on support for the construction of a particular SMR in Croatia under the assumption that it has not yet been built in any country but has the permits and it is licensed by regulatory agencies

Majority of participants is not a-priori against such construction, but it seems that many of them do not understand the licensing and regulatory terminology.

In 2026-2 survey the question on acceptance of SMR construction versus large NPP construction in participants' neighbourhood was asked "Would you rather accept the construction of a small SMR near your place of residence instead of a classic nuclear power plant such as the Krško NPP?". Four answers were offered, namely "Absolutely yes", "Absolutely no", "Don't know", and "I don't want a nuclear power plant built". The results are depicted on Figure 2.

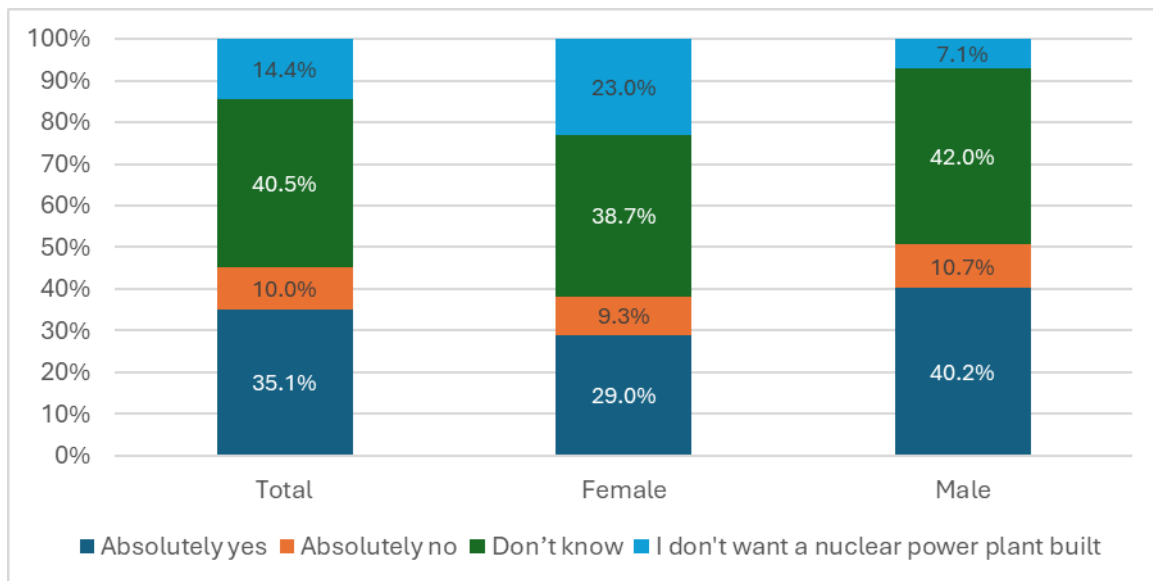


Figure 2: Results of 2026-2 survey on acceptance of SMR construction versus large NPP construction in participants' neighbourhood

Slightly more than one third of the participants prefer the idea of SMR construction as opposed to large NPP construction, while 40% selected the answer “Don’t know” possibly indicating that the participants are not very clear on the difference between these two types of nuclear power plants.

Several questions in the 2026-2 survey addressed economic issues related to SMR technology. Among others, there was a question “Do you believe that mass factory production of SMRs can lead to cheaper electricity globally compared to smaller construction of large NPPs?” offering three answers, namely “Yes”, “No”, and “Don’t know”. Approximately 50% of the participants believe that mass SMR production compared to smaller number of larger units would result in cheaper electricity with slightly more confidence expressed by males (54.5%) compared to females (43.5%). More than one third of the participants (37.8%) selected the answer “Don’t know” which is a very similar percentage as the one observed for the previously discussed question. It becomes rather evident that two out of five participants do not know enough about SMRs to be able to distinct them from large NPPs.

The 2026-2 survey asked an interesting question about how familiar participants are with individual SMR designs offering multiple selection of 8 SMR constructors, namely NuScale Power VOYGR (USA), Rolls-Royce SMR (UK), GE-Hitachi BWRX-300 (USA/Japan), KHNP i-SMR (Korea), Westinghouse AP300 and eVinci (USA), TerraPower Natrium (USA), Holtec SMR-300 (USA), and EDF NUWARD (FR). The ninth option was the answer “None” which was selected by 67% of the participants. Most recognized companies and SMR designs are Rolls-Royce SMR (UK) (18.6%), GE-Hitachi BWRX-300 (SAD/Japan) (12.2%), and NuScale Power VOYGR (USA) (8.6%).

### **3.5 Radioactive waste management**

In both 2026 survey there were several questions regarding radioactive waste management. For this preliminary analysis only the results of one question that was the part of the 2026-1 survey, but also appeared in 2016 survey, are presented.

The participants were asked to express their position on three statements, namely “Radioactive waste can be stored safely.”, “A radioactive waste disposal site should be built in the Republic of Croatia.”, and “Each EU member state is solely responsible for the radioactive waste generated on its territory.”. Five possible answers were offered, namely “Fully support”, “Partially support”, “Don’t know”, “Partially disapprove”, and “Fully disapprove”. Overall results are presented in Table 5.

As indicated in Table 1 there are differences between the main characteristics of the participants of 2016 and 2026-1 surveys which requires cautious comparison. Nevertheless, it is interesting to note that there are strong similarities between participants’ position in respect to the statement that each EU country is solely responsible for radioactive waste management. In both surveys roughly 70% of the participants fully or partially support that statement. However, in contradiction to that position, just 59.1% of 2026-1 survey respondents and only 32.7% of 2016 participants support construction of radioactive waste disposal site in Croatia.

Table 5: Comparison of participants' position towards radioactive waste management for 2016 and 2026-1 surveys

Survey	Fully support	Partially support	Don't know	Partially disapprove	Fully disapprove
<b>Radioactive waste can be stored safely.</b>					
<b>2026-1</b>					
<b>Total</b>	38.4%	35.4%	15.7%	7.2%	3.3%
<b>Female</b>	23.6%	38.7%	21.7%	11.5%	4.5%
<b>Male</b>	49.8%	32.8%	11.0%	3.9%	2.5%
<b>2016</b>					
<b>Total</b>	22.5%	29.3%	21.9%	10.9%	15.4%
<b>Female</b>	20.0%	28.3%	26.5%	10.0%	15.3%
<b>Male</b>	25.3%	30.4%	16.9%	11.8%	15.6%
<b>A radioactive waste disposal site should be built in the Republic of Croatia.</b>					
<b>2026-1</b>					
<b>Total</b>	<b>32.2%</b>	<b>26.9%</b>	19.4%	9.2%	12.3%
<b>Female</b>	24.6%	23.6%	24.6%	10.2%	16.9%
<b>Male</b>	38.0%	29.4%	15.4%	8.3%	8.8%
<b>2016</b>					
<b>Total</b>	<b>15.3%</b>	<b>17.4%</b>	16.1%	12.3%	38.8%
<b>Female</b>	13.3%	16.0%	19.0%	12.7%	39.0%
<b>Male</b>	17.6%	19.0%	12.9%	11.9%	38.6%
<b>Each EU member state is solely responsible for the radioactive waste generated on its territory.</b>					
<b>2026-1</b>					
<b>Total</b>	<b>51.0%</b>	<b>24.8%</b>	11.9%	7.9%	4.3%
<b>Female</b>	<b>50.5%</b>	<b>24.3%</b>	14.1%	7.0%	4.2%
<b>Male</b>	<b>51.5%</b>	<b>25.2%</b>	10.3%	8.6%	4.4%
<b>2016</b>					
<b>Total</b>	<b>50.0%</b>	<b>20.2%</b>	17.4%	6.1%	6.2%
<b>Female</b>	<b>46.0%</b>	<b>21.6%</b>	19.9%	5.6%	6.9%
<b>Male</b>	<b>54.2%</b>	<b>18.7%</b>	12.9%	6.7%	5.5%

#### 4 CONCLUSION

During the beginning of 2026 the Department of Applied Physics of the Faculty of Electrical Engineering and Computing, University of Zagreb conducted a public opinion survey on nuclear energy and radioactive waste management primarily among student population but also partially seizing general population. Overall research performed in March 2026 consisted of two separate public opinion surveys. The first one was basically a continuation of surveys previously conducted in 2016 with added set of questions related to SMRs. The second survey was mostly addressing SMRs. The questionnaires also differ in approach. The first one offered just a brief introduction into the reasons for polling and research group, while the second one provided more details of SMR technology in introductory section.

Despite of the limitations imposed on direct comparison of the results between 2016 and both 2026 surveys, it is evident that the support for increase of nuclear share in energy mix substantially raised over the last 10 years with females remaining more sceptic towards the increase of nuclear

but also expressing more indecisive (Don't know) position. It also seems evident that more participants favour domestic location for possible NPP construction rather than the location in neighbouring country.

The level of information on nuclear safety and distinction between SMRs and large NPPs is low, with males feeling slightly more informed than females, but on the overall it is rather evident that two out of five participants do not know enough about SMRs to be able to distinct them from large NPPs. The awareness on different SMR constructors and designs is very low with 67% of the participants who never heard of any of the SMR specific designs.

As far as radioactive waste is concerned roughly 70% of the participants in 2016 and 2026 surveys fully or partially support the idea of countries' responsibility for radioactive waste, with increasing share being aware that Croatia should also build its own radioactive waste storage.

Two 2026 surveys differ in design, with one being more detailed and giving additional information. As expected, the overall impression is that the participants of that survey are more in favour of nuclear and showing slightly more level of information regarding nuclear issues. It would be interesting to research whether that surplus of "nuclear positivity" is lasting or was it just an instantaneous effect. That, as well as the detailed analyses of all data from both 2026 surveys is planned for the near future.

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