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Public Opinion about Nuclear Energy – A Comparison between Youngsters and General Population, Year 2023 Poll

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ABSTRACT

One of the important activities of the Nuclear Training Centre at the Jožef Stefan Institute, that started 30 years ago, is public information. We inform the visitors about energy, nuclear power, nuclear technology, Krško Nuclear Power Plant, radioactivity and fusion by live lectures, by an exhibition and by workshops.

Our main target population are the schoolchildren from the last grades of elementary school and from high school (ages 13-18). Since 1993 we monitor their knowledge and opinion by polling some 1000 youngsters each year. These polls were intended as a guidance to our information activities, as well as to detect trends in their opinion and to a lesser extent as a representation of public opinion about nuclear energy in general. The polls were always conducted before the lecture or visit to the exhibition of nuclear energy, to get their unbiased opinion. We found that their basic knowledge of energy issues and their attitude towards nuclear energy, which is relatively favourable, does not change much over the years. Also, the share of undecided is always relatively high.

Being aware that youngsters 'poll is not representative for general population we decided to poll for the first time the adults with the same set of 10 questions. The poll was conducted by a professional polling agency [5] on a representative sample of general population in Slovenia (1000 polled).

The results of the poll show that among the general population the support for nuclear energy and for a new NPP in Slovenia is much higher than among youngsters. The shares of those opposed and undecided are lower than in the group of our visitors.

1 INTRODUCTION

Since 1993 we invite all elementary and high schools in Slovenia to visit the ICJT Information Centre. The response of schools and the coverage of communities in Slovenia is reasonably good with more than 200 000 visitors so far.

Visits include live lectures about nuclear energy, workshops about radioactivity, guided tours of the permanent exhibition about nuclear technology and TRIGA research reactor. The bilingual (Slovenian/English) "Mini Encyclopaedia of Nuclear Energy" is freely available for every visitor.

We monitor the knowledge and opinion of our visitors by polling some 1000 youngsters each year. The poll has been conducted and the results have been reported for 30 years [1, 2] using several basic questions derived from the early public opinion research of the Faculty of Social Sciences in Ljubljana thirty-seven years ago [3] with some questions updated in 2004 and 2008. We were aware all the time that the polling of youngsters is not representative for the general population of Slovenia though there may be some correlation between them. Positions of youngsters probably reflect opinions they hear in their families and media information.

In the view of possible construction of the second block of Krško Nuclear Power Plant, almost certainly preceded by a nationwide referendum, a general population poll became a logical choice. We commissioned a professional polling agency [5] to conduct the poll. A representative sample of general population in Slovenia (1000 respondents, 50.6% male, 49.4% female) was polled in spring 2023 with the with the same basic set of 10 questions as the youngsters. Age distribution of polled general population and summarized age distribution of polled youngsters 2023 is shown in Figure 1. Age distribution of youngsters in more detail is shown in [2].

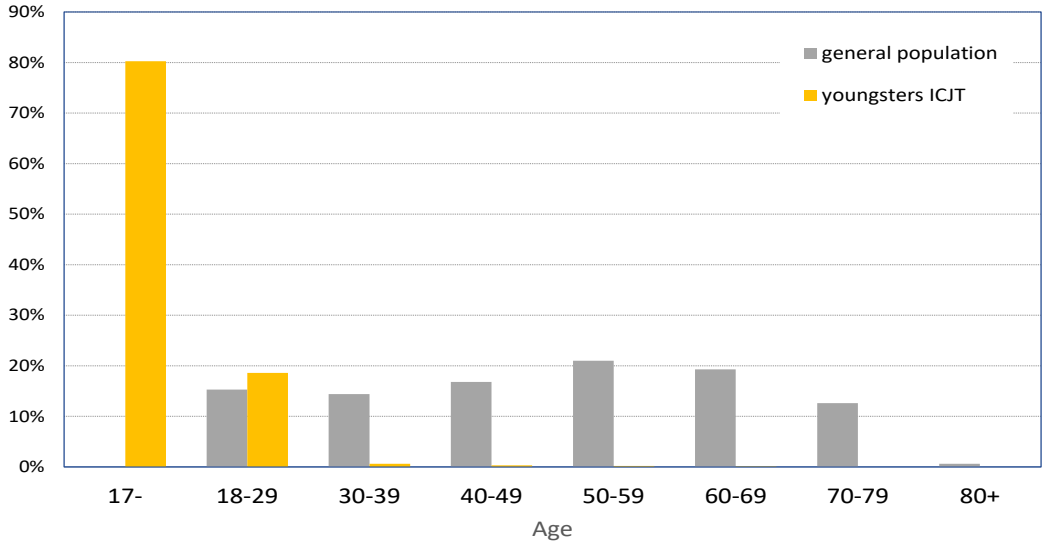

Figure 1: Age distribution of polled general population and polled youngsters in 2023

2 RESULTS OF THE 2023 POLL

Results are shown by graphs and comments according to the questions in the questionnaire, divided into five groups:

- General relative perceptions of risks and environmental dangers,
- Knowledge and understanding of several basic facts of nuclear energy and radioactive waste,
- Reasons for/against nuclear energy,
- Agreement with the potential unit 2 of NPP Krško and awareness about the limitations of other sources of electricity,
- Position towards nuclear energy and sources of information.

The graphs show the opinion of general population and youngsters in the year 2023.

2.1 General questions about risks, environment and acceptability

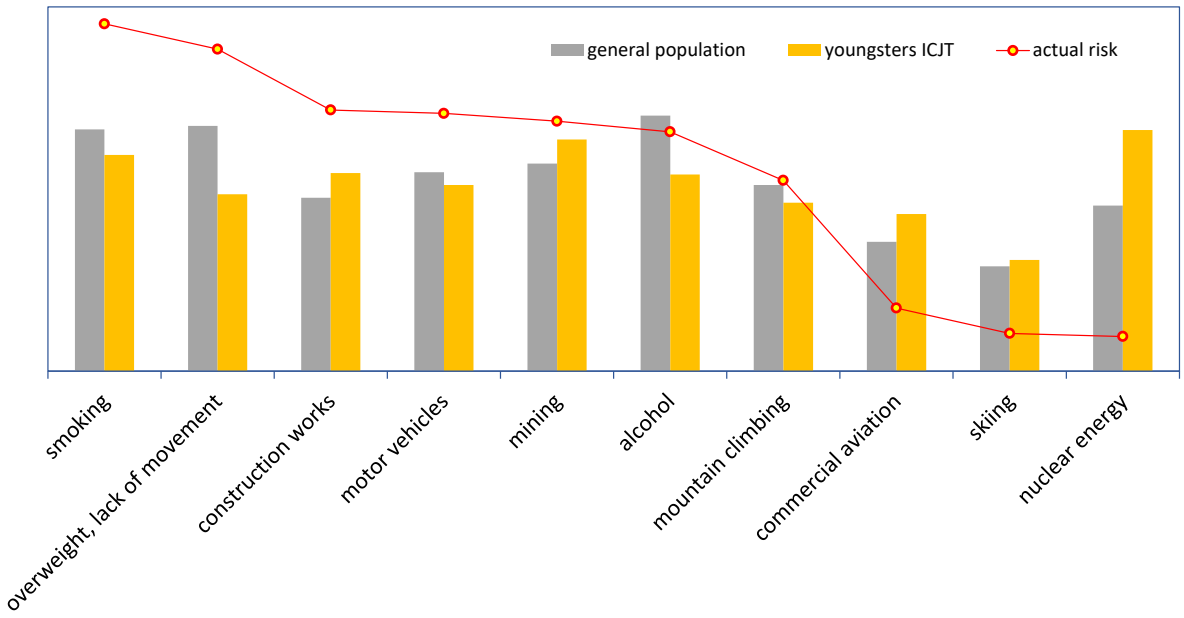

Figure 3: Ranking of human activities by perception of risk
(Actual risk based on calculated Loss of Life Expectancy [4])

Disparity between the actual risk and the perceived risk as rated by the general population is highest for nuclear energy (Figure 3), like in most countries. Youngsters exaggerate this risk even more than the adults do. Other risks, like smoking, alcohol, traffic etc. are rated considerably more realistically as compared to risks based on Loss of Life Expectancy by both adults and youngsters [4].

2.2 Understanding basic facts about nuclear energy, radiation and radioactive waste

Respondents have to answer whether some statements about nuclear energy are true or false. For the left half of statements, the correct answer is “true”, and for the right half, the correct answer is “false”. In the actual questionnaire, the statements are given in random order. Figure 4 shows the percentage of agreement (belief) with respective statements.

True statements were identified similarly by both populations, both underestimating number of NPPs in Europe and their role in combating CO_2 emissions. On the other hand, most adults and youngsters know that NPP Krško produces 1/3 of electricity in Slovenia, which is cheaper than electricity produced in thermal power plants. This is probably due to unproblematic operation of NPP Krško where economic news prevails in the media. Nevertheless, it is disappointing that less than 40% of respondents know that NPPs do not contribute to the greenhouse effect.

Adults chose substantially less false statements than youngsters implying some more accumulated knowledge. This is especially pronounced in the case of radiation from radioactive waste (RW) repository and NPPs producing acid rain.

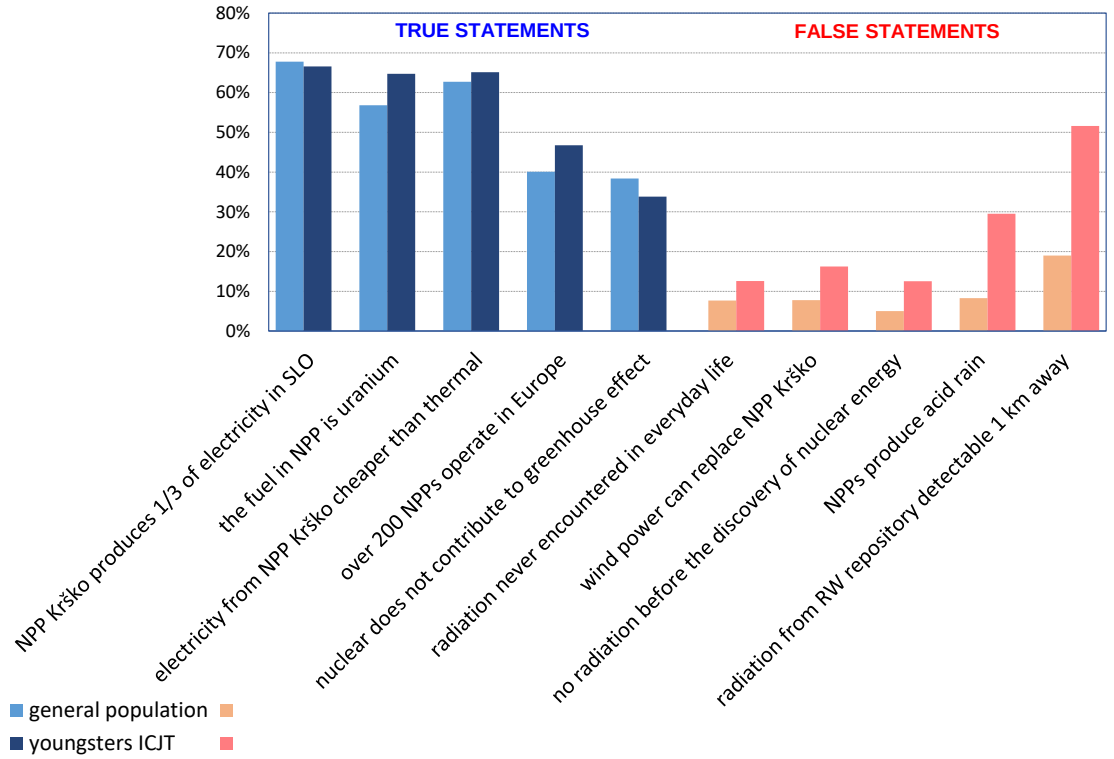

Figure 4: Agreement with the statements – knowledge about nuclear energy

2.3 Reasons for/against nuclear energy

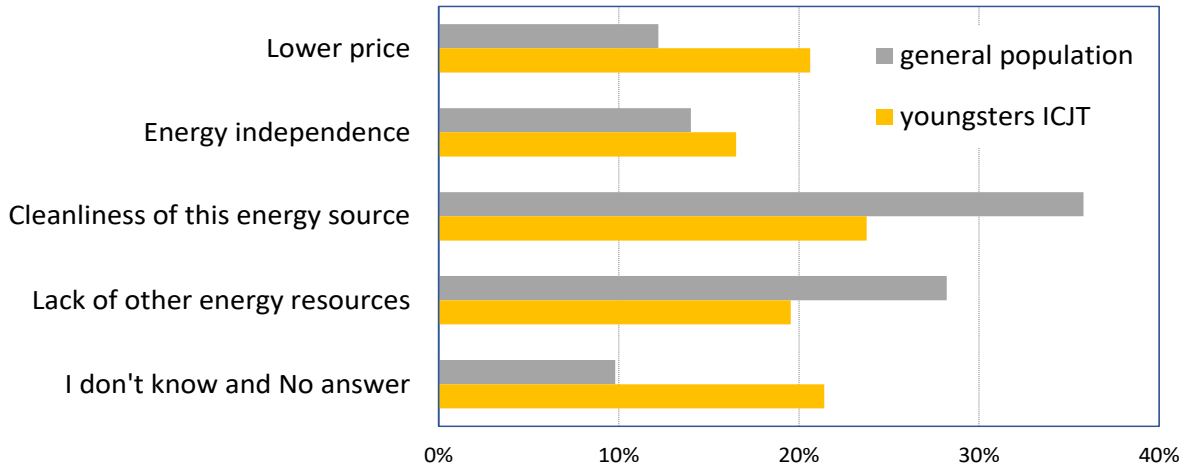

Figure 5: What are the reasons for use of nuclear energy? (One answer possible)

Cleanliness and lack of other energy sources are the most convincing reasons for nuclear energy, implying quite a strong environmental awareness of the general population (Figure 5). The opinion of youngsters is much more scattered making it difficult to discern actual priorities.

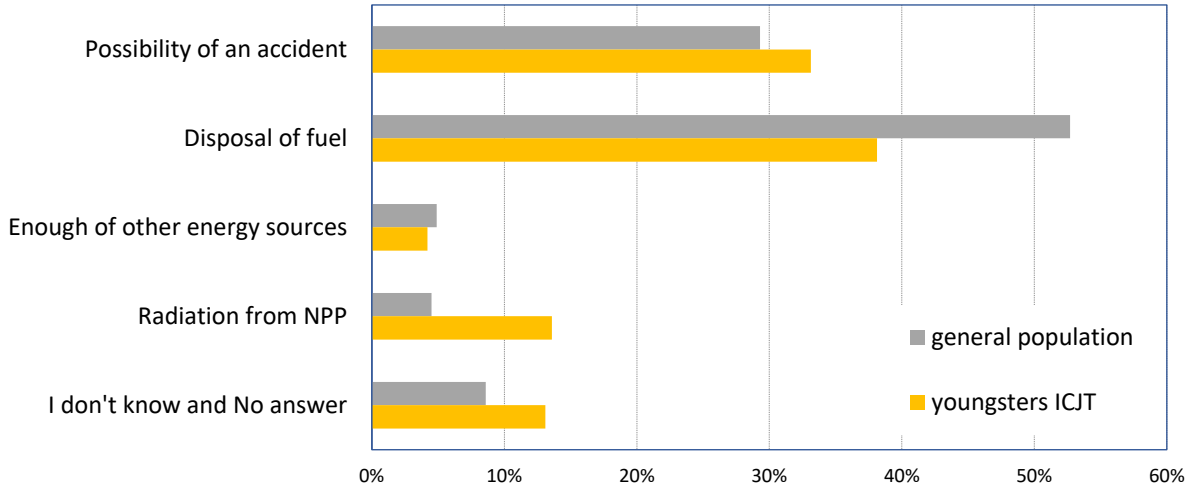

Figure 6: What are the reasons against nuclear energy? (One answer possible)

Spent fuel disposal is perceived as the main reason against nuclear power by an absolute majority of adult respondents (somehow inconsistent with the result about "cleanliness" in Figure 5). Possibility of an accident also represents a serious and similar disadvantage for both adults and youngsters (Figure 6).

2.4 Position towards NPP Krško

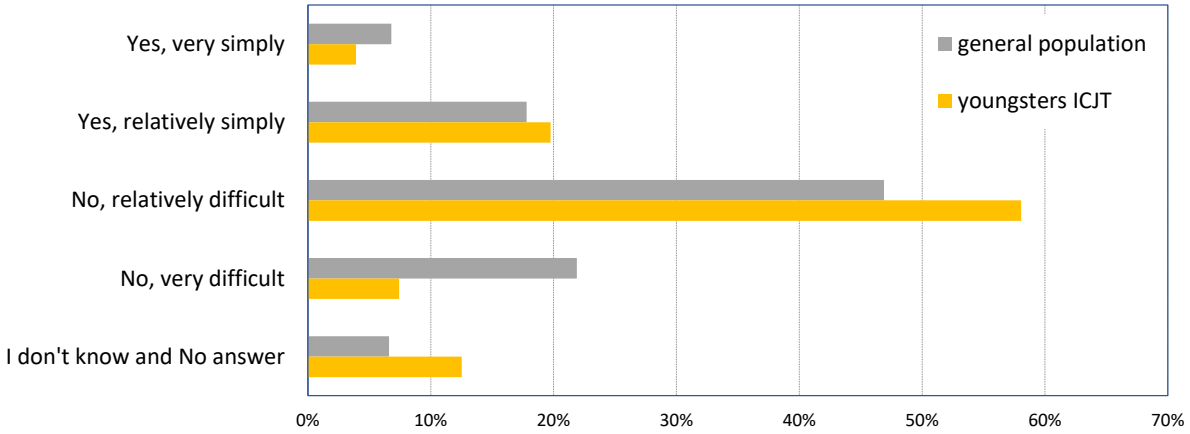

Figure 7: Do you believe that other sources (e.g., renewables) can replace NPP Krško?

About 2/3 of general population recognize that NPP Krško would be "relatively difficult" or "very difficult" to replace by renewables. The opinion of youngsters Is similar, just placing less weight on "very difficult" and more on "relatively difficult".

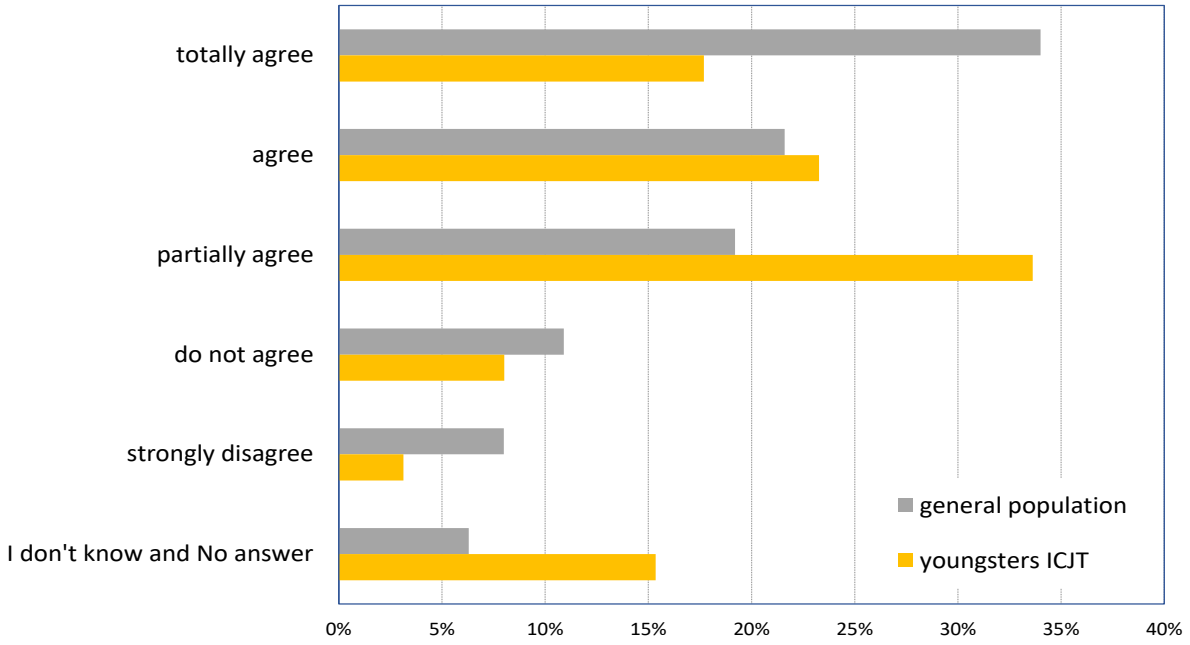

Figure 8: To what extent do you agree with the second NPP in Krško?

The agreement with the second NPP Krško among the general population is much higher than among youngsters, the sum of definite answers “totally agree” + “agree” representing absolute majority. The sum of answers “do not agree” + “strongly disagree” comprises just about 20%. The share of undecided adult respondents is small, considerably smaller then at the youngsters.

2.5 Position towards nuclear energy and sources of information

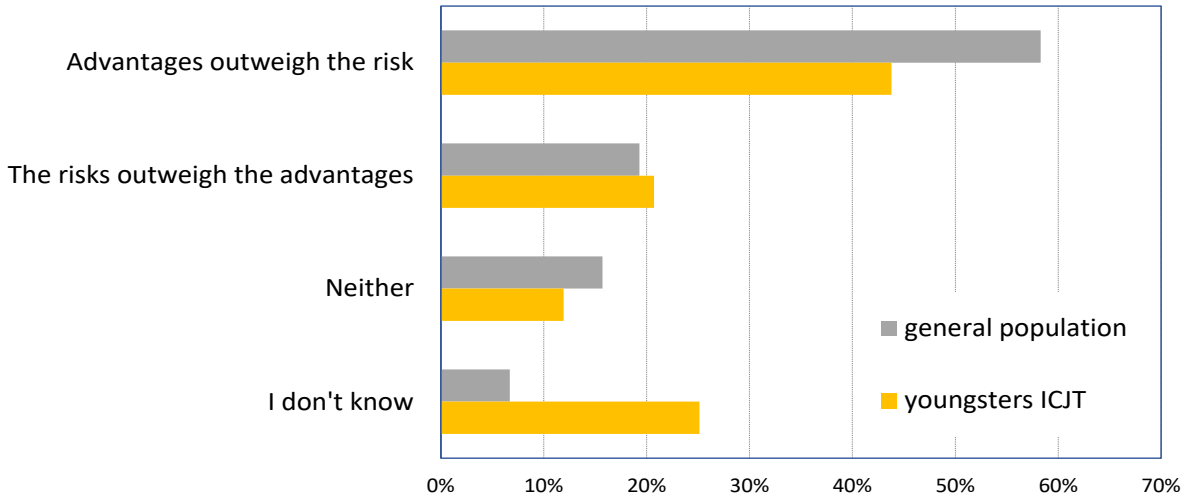

Figure 9: What is your general opinion on nuclear energy?

Absolute majority of the general population clearly perceives „Advantages… “over “The risks”. The share of undecided adult respondents is low, much lower than youngsters. Among the youngsters, „Advantages… “hold the position of relative majority.

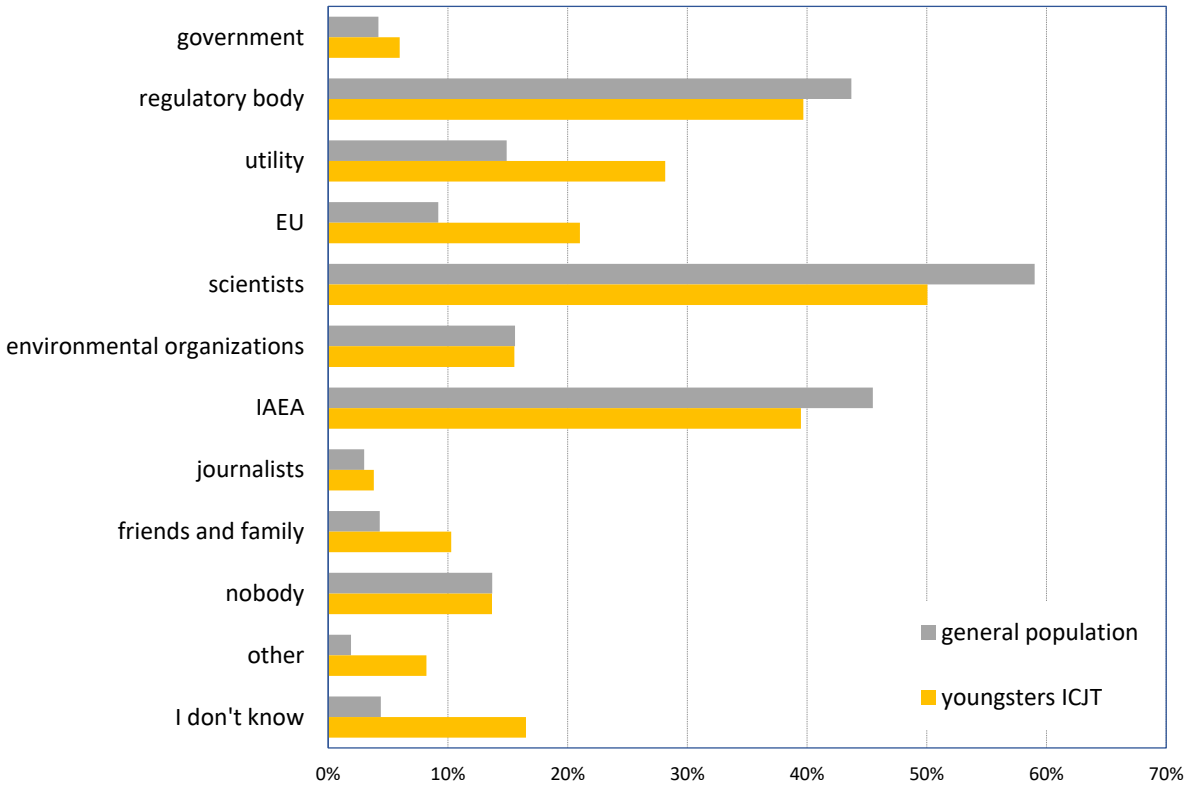

Figure 10: Which three of the following would you trust most to give you information about nuclear safety?

Among the general population, scientists, regulatory body and International Atomic Energy Agency enjoy the highest trust, even considerably more than among the youngsters. Credibility of government and journalists is very low (Figure 10).

3 CONCLUSIONS

In the view of a possible construction of the second block of Krško Nuclear Power Plant, the aim of this paper was to look for indications in public opinion of general population, the great majority of whom lived their entire adult life during the design lifetime of the first block (40 years). Of course, we were also interested in a possible connection between the adults' opinion and youngsters' opinion.

- Absolute majority of the general population agrees with the second NPP Krško. Similarly, absolute majority values advantages over the risks,
- About two thirds of the general population clearly identifies the limitations of renewables,
- Less than half of respondents, both adults and youngsters, understand beneficial environmental implications of nuclear. Risk of nuclear energy is overrated, though the general population fares better than the youngsters,
- Scientists, regulatory body and International Atomic Energy Agency enjoy the highest trust among the general population, even considerably more than among the youngsters. Government and journalists enjoy a very low credibility,
- The degree of acceptance of nuclear among the general population is higher than among the youngsters.

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