

Tangible Results of Nuclear Information Centre Ljubljana - 10306

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ABSTRACT

Nuclear Information Centre Ljubljana was established 15 years ago within the Nuclear Training Centre as a step towards achieving better long term social acceptance of nuclear power in Slovenia. Schoolchildren and other organized groups are our main target group. The mainstays of our activity are a live lecture, permanent exhibition and our web site www.icjt.org. The content of our information activities is also subject to feedback from polling of youngsters. Since 1993 we monitor the opinion trends by polling about 1000 youngsters before they listen to the lecture or visit the exhibition. These polls, however, give some instructive results, especially in they can show some trends, but they are not performed on a representative sample of population. Several independent polls on a representative sample of general population which were performed last year showed similarities and also some differences compared to the results of our poll. Furthermore these polls show that the results of 15 years of information activity are visible in the target age group and that Nuclear Information Centre as part of Jožef Stefan Institute is regarded as trusted source of information.

INTRODUCTION

Slovenia is the "smallest nuclear country", i.e., the smallest country, operating a nuclear power plant. It is a Westinghouse PWR located in Krško, close to the border with Croatia. Slovenia and Croatia share the ownership of the plant 50:50. NPP Krško started commercial operation in 1983 and its current net power is 696 MW_e. The share of nuclear in the total production of electricity in Slovenia is around 40% (coal-fired thermal 35%, hydro 25%).

In the early nineties the political movement to prematurely close Krško NPP was very strong. At the same time there was also the first attempt to find a location of low and intermediate radioactive waste repository. This search for location failed completely because of very low public acceptance. These were the main motivations for establishment of an information center with the Nuclear Training Center Ljubljana (in Slovenian language *Izobraževalni center za jedrsko tehnologijo* or ICJT) [1].

When the ICJT building was built, its basement was originally constructed to host the full scope simulator of the Krško NPP. As the plans for the simulator were changed (in the year 2000 the simulator was purchased and located at the NPP Krško), about 600 m² of available space in the basement was used for public information purposes. The first exhibition aimed at general public and schoolchildren was opened in 1991 and in 1993 we started to invite all elementary and high schools in Slovenia. The location in the centre of Slovenia and availability of technological and scientific infrastructure is quite attractive for schools and other groups from everywhere in the country and also from abroad. By now we have a reasonably good coverage of the communities in Slovenia (see Fig. 1).

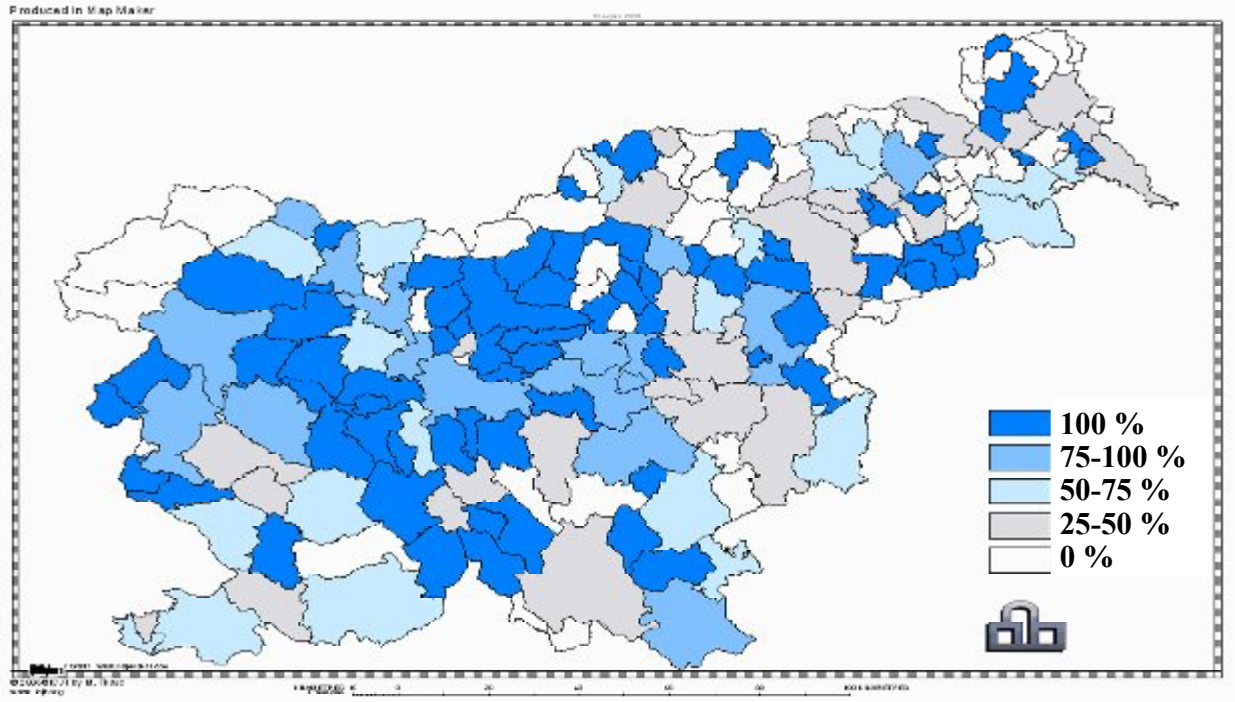


Fig. 1. Geographical distribution of visits to ICJT

There have been 2428 visits from schools and other educational institutions since 1993, resulting in total of 119.000 visitors to the ICJT Information Centre (Fig. 2).

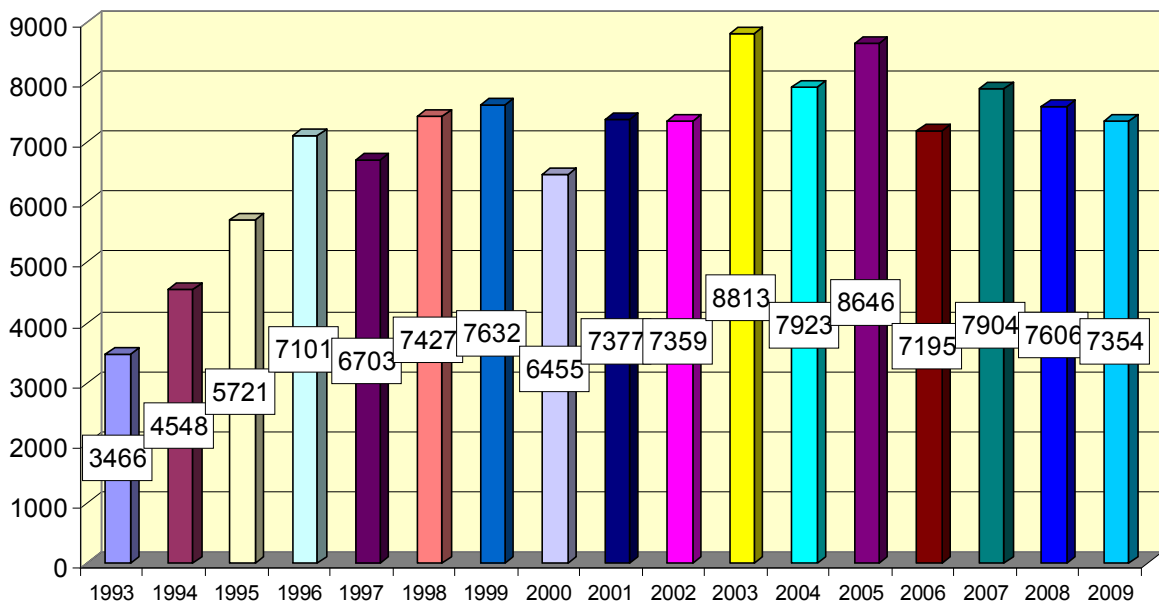


Fig. 2. Yearly number of visitors to ICJT

In the last years we have up to 8000 visitors per year (almost one half of one generation of schoolchildren in Slovenia). Most youngsters are from the 8th and 9th grade of elementary school (age 14 to 15). In parallel with the growing attendance we were constantly updating the lectures and the exhibition, improving the information technology and producing new printed materials as take-away leaflets.

INFORMATION ACTIVITIES

Since the very beginning the main stays of our information activities have been **live lectures** that offer an opportunity for the dialogue with the youngsters:

- Electricity from Nuclear Energy
- Radioactivity and Radioactive Waste
- Radioactivity Workshop (performed with real training sources and instruments)
- Nuclear Fusion

A tour of **the permanent exhibition** is a good opportunity for a relaxed deepening of the knowledge using information panels, computer games and exhibits. The exhibition is constantly evolving and now comprises sections about nuclear power, radioactivity and radioactive waste and nuclear fusion.



Fig. 3. The Permanent Exhibition in the Nuclear Information Centre at ICJT

During the 15 years we have independently issued or contributed to a wide range of **publications** intended for youngsters, schoolchildren, general population and journalists: leaflets and booklets about radioactivity and radioactive waste (together with the Radwaste Agency – ARAO), brochures about nuclear power and several editions of Mini Encyclopaedia of Nuclear Energy.

A **Website** www.icjt.org about nuclear energy and radioactive waste is maintained and regularly updated. The website includes Frequently Asked Questions Section with answers on new questions provided within days by nuclear professionals. The homepage has become a reliable source of information for media often followed by requests for additional answers and interviews with nuclear professionals from the Nuclear Training Centre. The interviews and answers were published by leading media in Slovenia.

For the more interested visitors the tour of the **TRIGA** research reactor and also to the radioactive waste storage is available.

We **poll** about 1000 youngsters every year since 1993 to monitor the opinion trends and to provide feedback for our information activities. Some of the questions in the poll remain unaltered from the very beginning, while some new questions are introduced and some obsolete questions are omitted from time to time in order to better reflect the current situation in Slovenia and European Union. An attempt was also made to poll the parents of the visiting youngsters with the same questionnaire and compare the results [2].



Fig. 4: Some publications published and/or prepared by ICJT

TANGIBLE RESULTS AFTER 15 YEARS OF INFORMATION ACTIVITIES

Public information of nuclear issues is a very long-term activity. There are some people who will not change their opinion because simply they don't want to and others will be prepared to re-think certain previous beliefs only after they will hear some opposite arguments repeatedly and/or from people they trust. This is one of the main reasons why we have focused our information activity to youngsters - they are still fresh minded and they are prepared to accept

new arguments and ideas. Nevertheless, as they are adolescents when they visit our Information Center, it will take generations before we can expect a notable change in the society in general. After 15 years of activity we can claim that changes in public attitude toward nuclear are visible. Indeed, a significant part of this change should be attributed to a worldwide increased awareness of issues such as oil price growth, security of energy supply, global warming, international change of attitude towards nuclear etc. Nevertheless, some results of public opinion polls (performed independently of ICJT) can be directly related to our activity.

Eurobarometer poll on nuclear waste

The first tangible results of ICJT's public information activity came from a Eurobarometer poll in spring 2005 [3]. In this poll, among other questions, respondents in all EU countries were asked several questions testing their factual knowledge on radioactive waste. Respondents from Slovenia showed third best knowledge in Europe (Fig. 5).

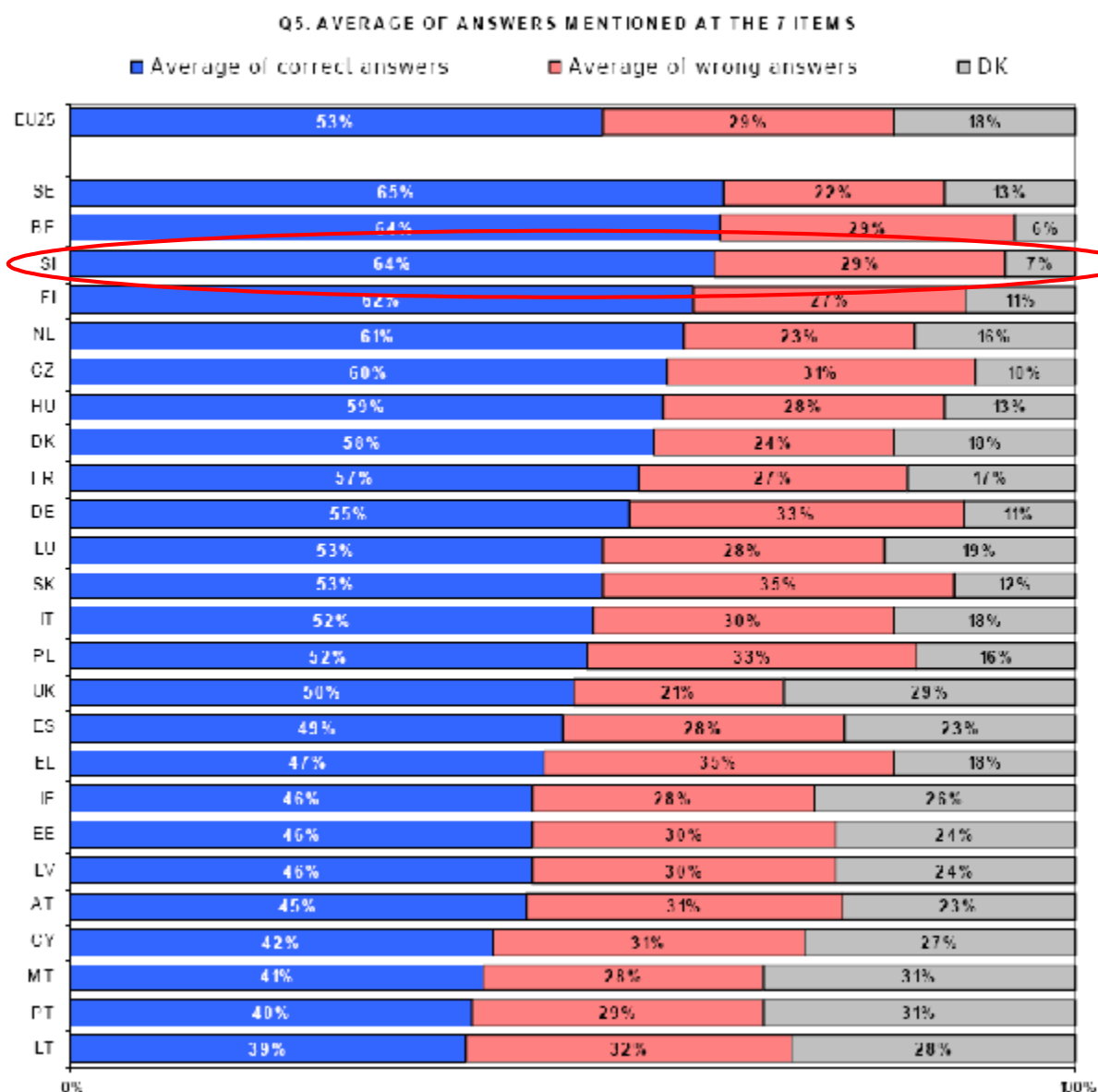


Fig. 5. Knowledge of nuclear waste issues in EU countries in 2005 [3]

This result is certainly a consequence of extensive public information activity of Slovenian radwaste agency ARAO. As ICJT is one of the pillars of ARAO's activity in this area, we can take some credit, as well.

ARAO poll

Slovenian Agency for Radwaste Management (ARAO) performs regular opinion polls on a representative sample of adult population in Slovenia since 1995. In their 2007 poll [4], one of the questions was whom do you trust most concerning siting of radioactive waste repository. Several institutions were offered as possible answer (from left to right on Fig. 6): journalists, minister for environment, Slovenian radwaste agency ARAO, Union of ecological movements of Slovenia, Jožef Stefan Institute, major, community council, locality (a lower unit than community) council. As can be seen from Fig. 6, Jožef Stefan Institute (JSI) is perceived as the most trusted source for nuclear waste siting issues, clearly ahead an environmental organization which was second. Part of this trust probably originates from JSI's academic reputation, but a significant share can also be attributed to information activities of ICJT.

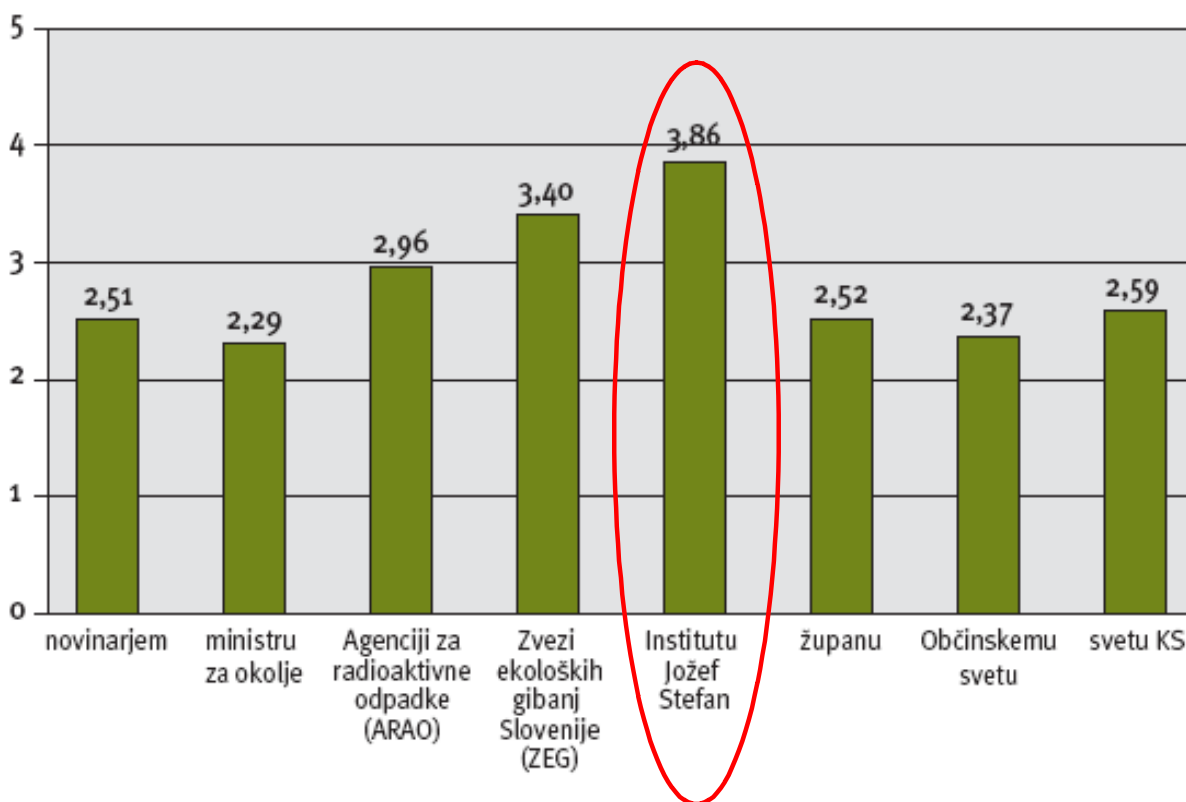


Fig. 6. Jožef Stefan Institute is trusted most according to an opinion poll by ARAO [4]

Public opinion poll by Epis

A professional polling company Epis performed a public opinion poll on nuclear energy in 2008 [5]. They have tested both the knowledge and the acceptance of nuclear energy in Slovenia. The most interesting part of this poll is the analysis of answers according to the age of respondents.

This analysis shows that the youngest age group, 18-24 years, exhibits the highest degree of knowledge, as well as the highest support for a second NPP in Krško among all age groups.

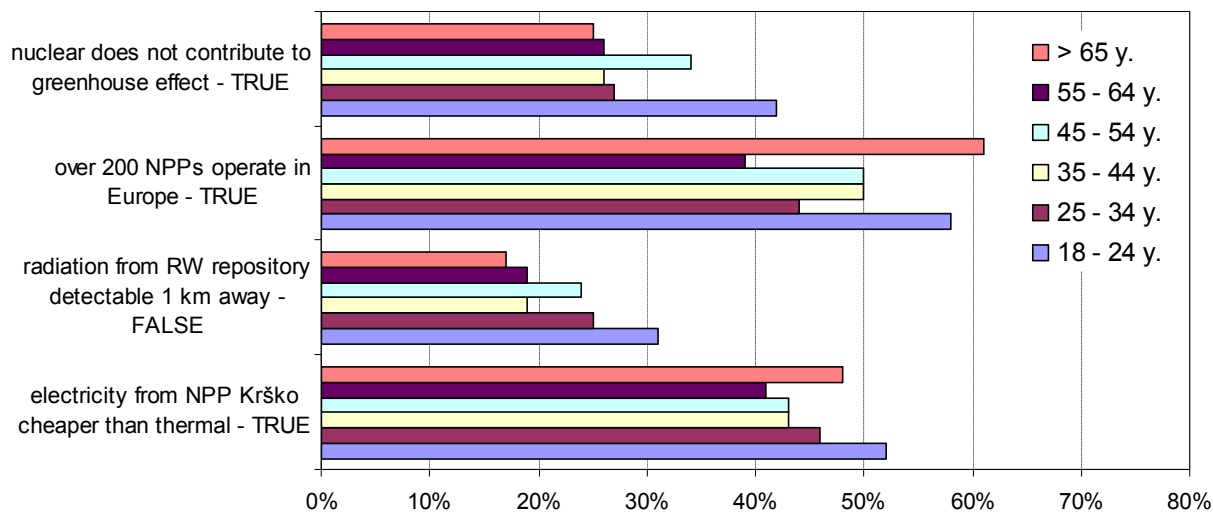


Fig. 7. Knowledge of nuclear issues among different age groups in Slovenia [5]

Epis have not calculated an average degree of knowledge as was the case in the Eurobarometer poll. Therefore Figure 7 shows the distribution of correct answers to some typical questions. For 3 out of 4 questions, the highest degree of correct answers was in the group 18-24 years. Similarly, the youngest age group is the most supporting the idea of a second NPP unit in Krško (Fig. 8).

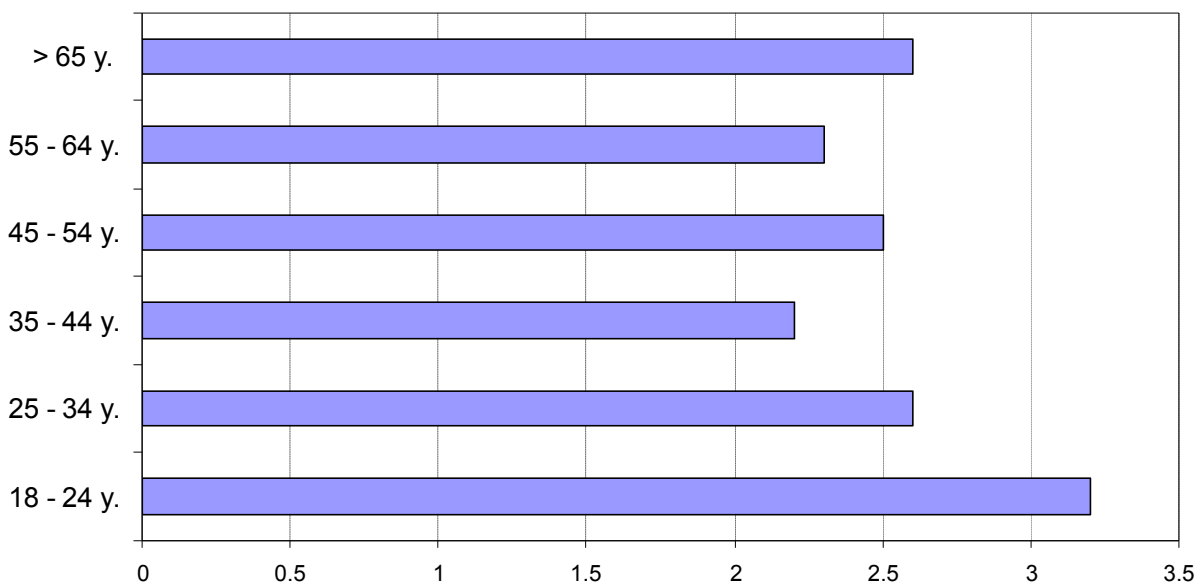


Fig. 8. Support of second NPP in Krško among different age groups in Slovenia [5]

Youngsters who visited ICJT Information Center in 1996, when we first had over 7000 visitors, are now 27 years old. Since then, a significant fraction of each generation visited ICJT. These are exactly the respondents in age group 18-24 years. Their better knowledge and attitude shows that our past activity has paid off.

CONCLUSIONS

In countries with small nuclear program there are several synergies between training and public information. This was realized very soon after establishment of Nuclear Training Center Ljubljana (ICJT). In the past 15 years we have developed many communication tools (lectures, exhibition, experiments, publications) and professional skills of ICJT staff. In the last years our web page is becoming more and more important, as it both disseminates information and is an anchor point for journalists.

The credibility of Information center at ICJT originates from being part of academic institution, as well as from strictly avoiding any propaganda, but presenting facts (both benefits and risks) and leaving the audience to decide.

In the last couple of years, three independent public opinion polls have shown positive results in public awareness and acceptance of nuclear energy that can be attributed to 15 years of information activity of ICJT.

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