

# **The level of support for nuclear energy in Poland**

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## Introduction

In European Union – and elsewhere – all investment activities in energy sector require public acceptance. These include transmission lines, oil or gas pipelines, wind farms and also nuclear projects.

Directive on the assessment of environmental impacts states that the investor must submit appropriate information to the “concerned public”, and also enable the communities involved to express their opinion on the proposed project prior to the start of its implementation.

This directive, adopted in 1985, has been thoroughly amended in 1997. It is supported by other legal documents, in particular by the Strategic Environmental Assessment Directive and the Aarhus Convention ratified by the European Council.

Another important document, Directive on public's participation in the decision-making procedures, entered into force and is binding since 25 June 2005. This directive defines the notion of “concerned public.” In this directive “concerned public” means the public which is affected, or potentially affected, by the decision's consequences or which is interested in the decision concerning the investment. Thus the definition of the public is very capacious and in practice has no limits (e.g. geographic).

Recently, on the DG TREN initiative, various activities within the Inclusive Governance of Nuclear Activities in Europe are taken, to diagnose the situation in the area of existing legislation and best practices in the field of public information and to involve the public in the decision-making processes in nuclear sector.

Based on these analyses, proposals for improved methods of public communication and strategies for engaging various social groups and organizations (stakeholders) in the nuclear decision-making process are expected. The groups (organizations) which should participate in decision-making process include: regulatory bodies and authorities responsible for radiological protection, operators, the entities responsible for radioactive waste management, local and regional governments and the networks (federations) of such governments existing in Europe, local and national non-governmental organizations, the experts.

Following the government's decision on adopting the "Energy policy for Poland up to 2025", the discussion on the Poles' attitudes toward the development of nuclear power in our country becomes more and more extended (the document adopted by the government envisions the start-up of the first Polish nuclear power plant by 2021-2022).

The document referred to above contains the following statement: "The necessary diversification of the primary energy sources and the need for the reduction of greenhouse gas emissions into atmosphere justify the introduction of nuclear power into the national system. However the implementation of this proposal requires **public acceptance**. The forecasts indicate that in the second decade of the period under consideration there will be the need for nuclear-generated electricity, thus – taking into account the investment cycle length – **public debate on this issue must be initiated immediately.**"

While defining the future informational and educational activities, to explain and justify to the public the advantages resulting from the implementation in Poland of a new electricity generating technology, one should – in my opinion – draw the lessons from the activities previously conducted or given up. One should also get to know the current status of the public attitudes toward nuclear power.

National-scale public attitudes toward nuclear power constitute only the first, introductory element of the whole long process of making the decision to build a nuclear power plant (NPP) (or the argument against such decision). Nevertheless the knowledge of these attitudes is important, because they usually reveal other important phenomena, such as the self-awareness of the level of knowledge of nuclear issues.

#### 1. Purpose and methodology of the survey

For over 15 years the National Atomic Energy Agency (NAEA) commissions a national survey of Polish public attitudes toward the nuclear energy applications, in particular – toward nuclear power, which is performed by specialized institutions.

In 1994-2000 such surveys have been performed by DEMOSKOP, and since 2003 NAEA-commissioned surveys are conducted by the Institute for Public Opinion and Market Surveys PENTOR S.A. Since 1994 such surveys are conducted systematically every 2 years, and the questionnaire includes some questions, which for years remain practically unchanged. Thus the comparison of results for a period of a dozen or so years is possible.

The main purpose of these studies was to learn about the Poles' opinions and attitudes toward the nuclear energy use in the energy and other sectors of the economy. Detailed research goals were focused on learning the opinions on the following issues:

- use of coal as the source of electrical energy,

- use of raw energy materials emitting CO<sub>2</sub>,
- use of nuclear energy for meeting national energy demands and to reduce CO<sub>2</sub> emissions,
- building a nuclear power plant in the vicinity of the respondent's place of residence,
- use of ionizing radiation in various fields,
- envisioning of concerns and grounds for objections to the nuclear power plant construction.

The most recent survey has been conducted in the period from 22 November to 3 December 2004. It has been performed within the framework of a cyclic omnibus poll (Pentor-Bus) on a representative sample of Poles, aged over 15. The realized sample numbered 1013 people.

The interviews have been conducted in the respondents' homes, using the method of computer-supported personal interviews. In this method the pollster interviewing the respondent reads successive questions from the laptop computer and saves the responses in the computer memory. Each response is logically tested, thus enabling the elimination of possible errors in the respondents' statements.

The set of questions involving the psychosocial conditions concerning the use of nuclear technologies consisted of closed questions containing predetermined answers, from which the respondent selected the one corresponding to his/her opinion. Collected information has been related to the social-demographic data and the respondents' characteristics and attitudes. The interviews have been conducted during the weekend, when the probability of finding the respondents at home is the largest. The starting addresses for the survey have been randomly drawn from the Governmental Center for Population Records ("Pesel") database. In each randomly drawn survey region five interviews have been conducted. The first interview – with the respondent whose name has been drawn, and the next four – in every fifth home/household, with a male and female respondent alternatively. The algorithm for address-starting point drawing accounted for the administrative and urban division of the country into regions, provinces and locality types (village, towns with population up to 20 thousand, 20-200 thousand and over 200 thousand). Maximal statistical error of the survey on the sample numbering 1000 is 3.2% at the confidence level of 0.95.

## 2. PENTOR survey results

### 2.1. Reduce coal burning

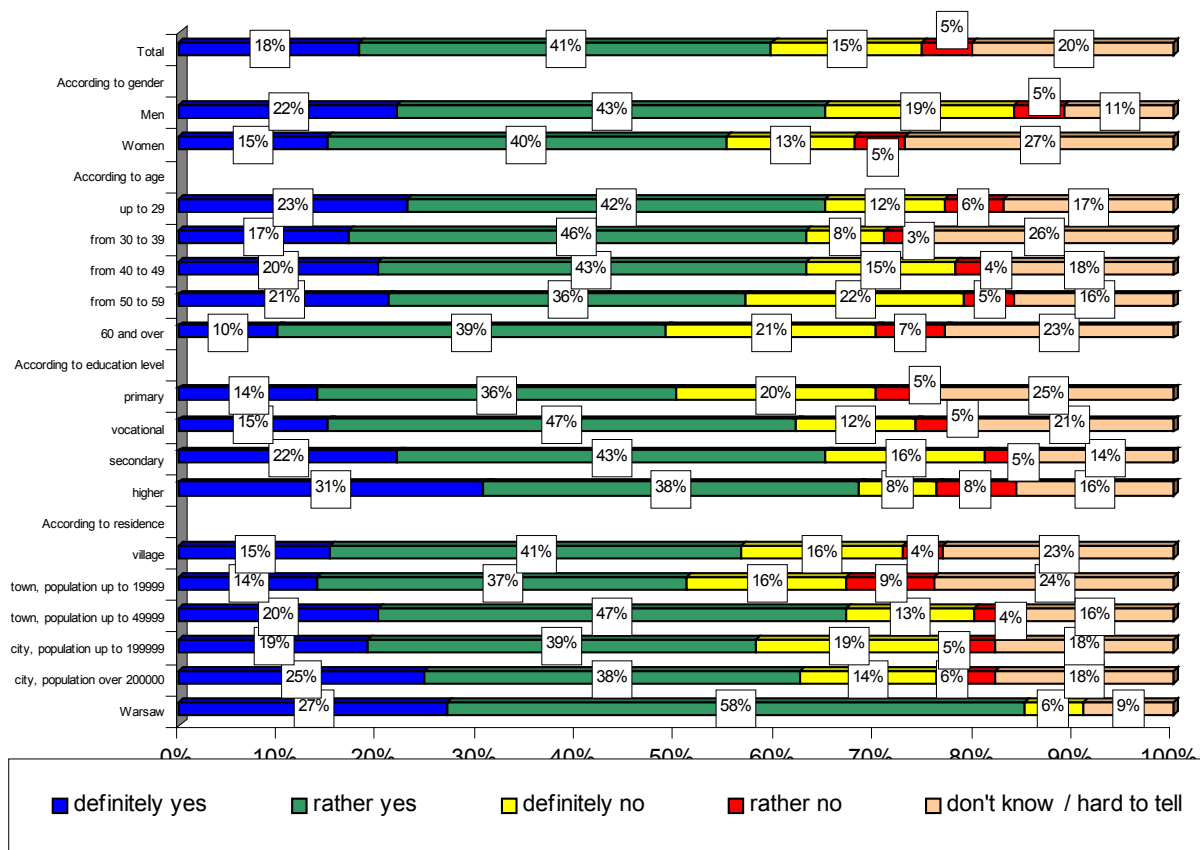


Fig. 1. Responses to the question: “In your opinion, should we seek a gradual reduction of the use of coal?”

The question: “Electricity in Poland is generated mainly in coal-fired power plants. In your opinion, should we seek a gradual reduction of the use of coal?” has been answered in the following way: “yes and rather yes” –59%, “no and rather no” – 20%, “don’t know” – 21%.

This figure shows that the gradual reduction of the use of coal for electricity generation is favored by somewhat more men than women (65% versus 55%) and by people with higher education (support rises almost proportionally with education level). This idea is also more favored by the youngest people, aged up to 29 (65%).

Definitely the strongest support for the idea of limiting the use of coal for electricity generation has been found among the residents of Warsaw, where 85% of respondents favored such solution. Taking into account the division into various social and professional groups, this idea gained a considerable support among managers (73%) and the smallest - among farmers (50%). It should be noted that a considerable number of Poles have no opinion on restricting the use of coal for electricity generation (one in every five polled).

## 2.2. Restrict the use of CO<sub>2</sub> emitters

Not all of the Earth’s residents know that climate changes, already commonly

observed, are caused mainly by the carbon dioxide emissions. Luckily, in Poland the public awareness of this issue is rather high. Definite majority (72%) of surveyed Poles agrees with the opinion that the carbon dioxide emissions are responsible for the climate change and that for this reason the use of raw energy materials emitting CO<sub>2</sub> should be restricted. Over 10% of the respondents do not agree with this opinion. The acceptance of this opinion is greater among men than women (significant number of whom do not have an opinion – 23%), among younger than older (78% support for people aged up to 29, versus 61% for older than 60) and among better educated. Supporters of the restriction of the use of carbon dioxide emitters to generate electricity are also more frequently found among those with higher household income. As in the case of postulated gradual restriction of the use of coal to generate electricity, the support for the proposal to restrict the use of raw energy materials emitting CO<sub>2</sub> was the largest among the managers (89%) and the smallest among the farmers and pensioners (63% and 64% respectively).

### 2.3. Special preferences for nuclear power

The respondents have been asked a difficult or perhaps even somewhat loaded question: *“In view of the fact that the nuclear power does not cause CO<sub>2</sub> emissions, should this form of energy generation be given special preferences, similarly to the renewable energy sources?”*

From the responses it turned out that the nuclear power as a specially preferred CO<sub>2</sub> emission-free form of energy generation, is supported by 42% of Polish population. However a significant number of respondents (35%) object to this idea and one in five respondents has no opinion on this issue. The proposition was supported by more men than women (46% versus 39%), by people with higher education and aged 30-39 (56%). The highest support has been found among the inhabitants of Warsaw and the cities with population over 200 000.

Nuclear power as a preferred form of energy generation is supported more frequently by the people declaring a higher household income (approx. 50% support among people with family monthly income exceeding 1500 PLN). This opinion is also shared by over half of the clerks and officials – in this social-professional group it gained the largest approval.

### 2.4. Consent to the nuclear power in Poland

The figure below shows that at present the use of nuclear energy for meeting the national energy demands is supported by 42% of the population. 38% of the respondents reject the use of nuclear energy for this purpose, while one fifths of the respondents don't know what to think of this idea.

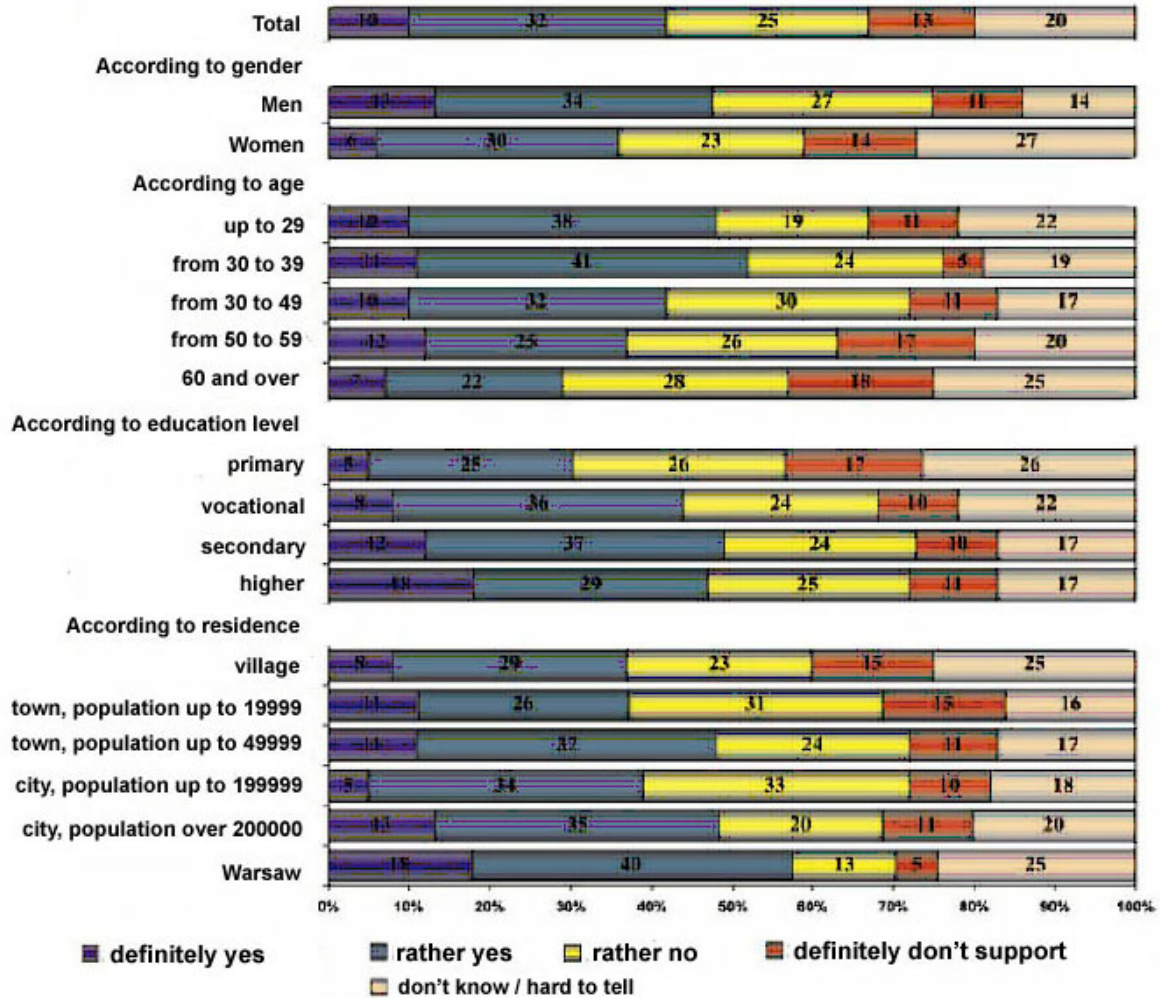


Fig. 2. Degree of acceptance of the nuclear power use to meet the energy demands

The acceptance of the use of nuclear power to meet the national energy demands has been higher among men than women, among people with secondary or higher education, belonging to the highest income group, residing in Warsaw and representing the managerial or clerical class.

It is worthwhile to note here that in the past 15 years the nuclear power supporters were never in majority although once, in 1991, the percentage of supporters reached 43% (while 44% of the respondents were opposed).

Figure 3 shows that in the past 10 years the nuclear power program has been supported by approximately 30-35% of respondents, while about 40-50% opposed the nuclear option. A significant percentage of Poles (15-20%) had no explicit opinion on this matter.

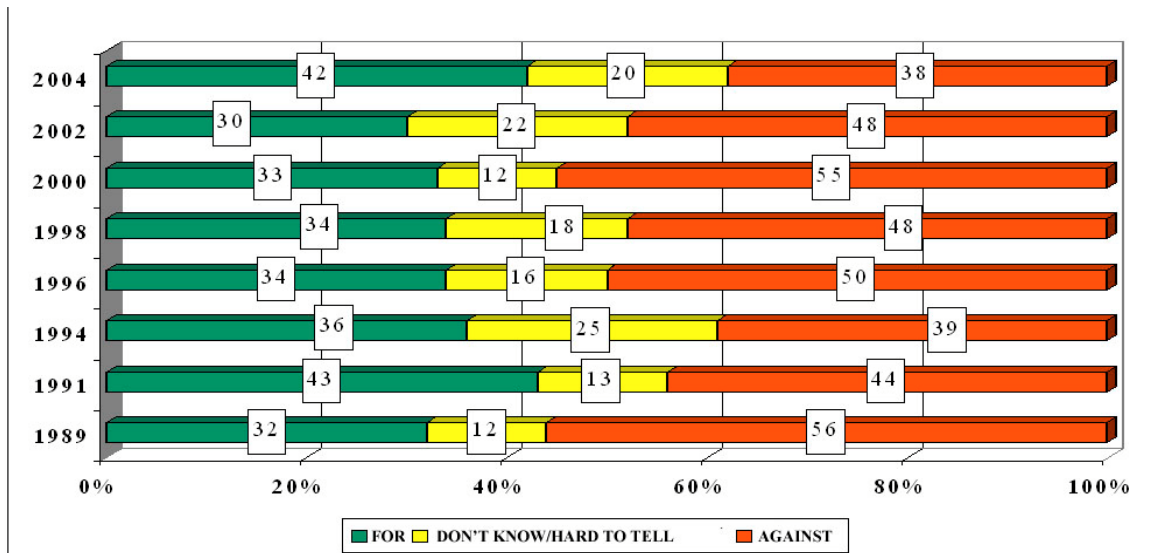


Fig. 3. Level of Polish publics' acceptance of the use of nuclear energy to meet national energy demands, in 1989-2004

### 2.5. Not in my backyard

Despite some incentive, or reminders that building the NPP would ensure cheaper electricity supplies to the population, and also the development of industrial and social infrastructure and new jobs, only (or perhaps as many as) 31% of respondents consent to the NPP construction in the vicinity of their residence. 54% are against such proposal, with 31% decidedly so. The analysis of detailed response tables identified only one social-professional group – the farmers – where the acceptance level reaches 49% (with 45% opposed).

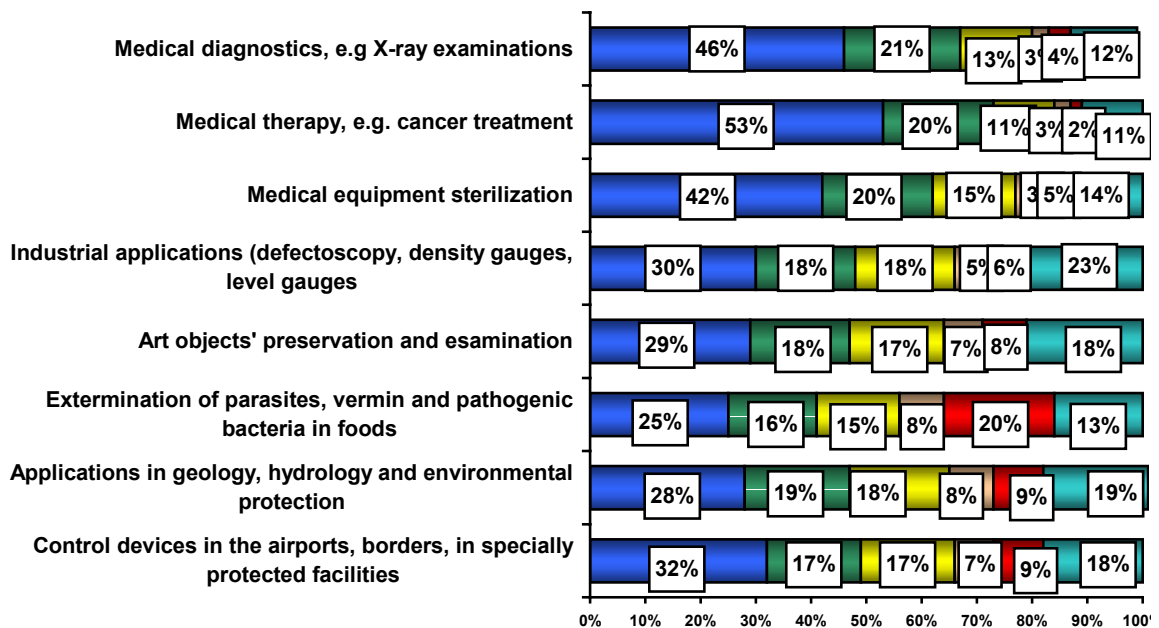


Fig. 4. Level of acceptance of the use of nuclear techniques involving ionizing radiation in selected areas

## 2.6. “Yes” for the use of nuclear techniques

The acceptance of the application of nuclear techniques involving ionizing radiation is the strongest in medicine – first of all for medical therapy and diagnostics (73% of all Poles approve their application in medical therapy and 67% in diagnostics), and also for the medical equipment sterilization.

Nuclear technique applications in other areas enjoy the support of nearly a half of Polish population. Roughly the same number of people support the nuclear technique applications in control devices in the airports (in specially protected facilities), in the industry, for the preservation and examination of art objects, and in hydrology, geology and environmental protection.

Clearly lowest support (41%) is given to the nuclear technique applications to exterminate the parasites, vermin and pathogenic bacteria in foods.

It should be noted that 2 years earlier the use of nuclear techniques for food hygiene has been accepted by only 16%. Also the acceptance of the use of nuclear techniques in medicine has been significantly weaker – 60% total for diagnostics and therapy.

## 2.7. Fear of accident

Fear of the power plant accident is the most frequent (82%) reason for Polish public to oppose the building of nuclear power plants. Over 1/3 of all Poles (35%), justifying their opposition to the NPP construction, refer to the problem of disposal and storage of radioactive waste and spent nuclear fuel (respondents could indicate 1 or more responses).

One in each four respondents is concerned with the lack of information on the risks and benefits involved in building nuclear power plants. An important reason for the Polish public objection to the NPP construction in Poland is the still vivid memory of the events of 1945, i.e. dropping the atomic bomb on Hiroshima, and associating these events with nuclear power.



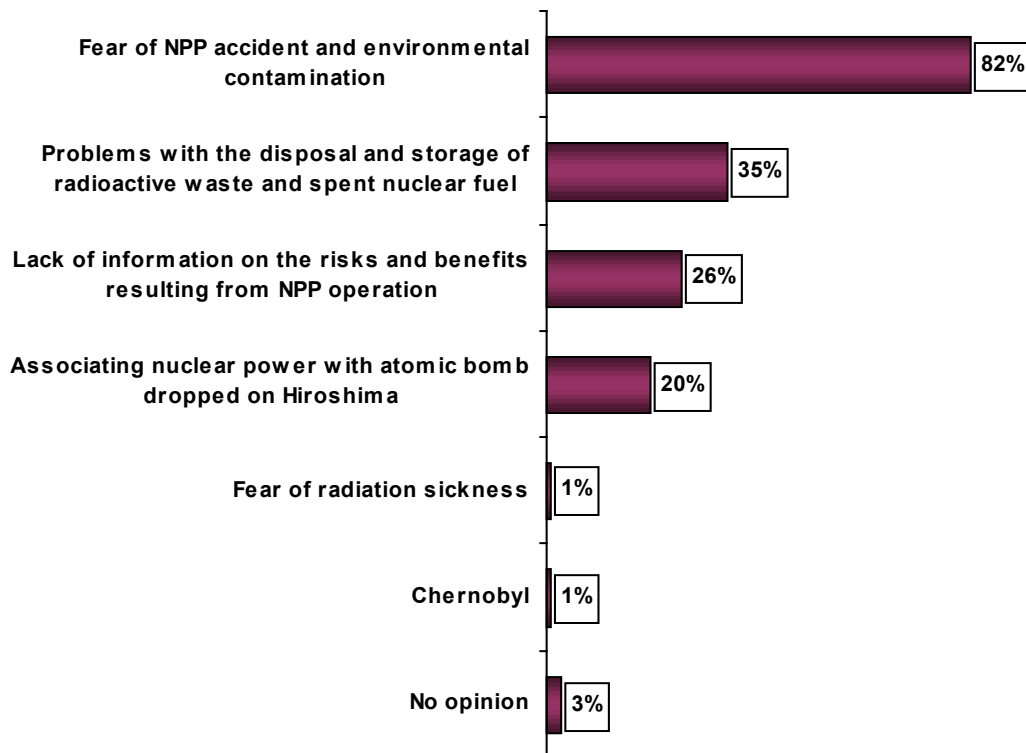


Fig. 5. Responses to the question: “*In your opinion, for what reason a part of the public is opposed to the nuclear power plant construction in Poland?*”

### 3. Results of the “Eurobarometer” survey

The survey commissioned by the General Directorate for Energy and Transport has been conducted in February and March 2005. The results have been published in June 2005 as the Special Eurobarometer 227 report.

The survey has been conducted by TNS Opinion and Social in 25 EU Member States and pertained to the EU public opinion mainly on the safety in radioactive waste management.

However the question related the nuclear energy was also included. The results are shown below.

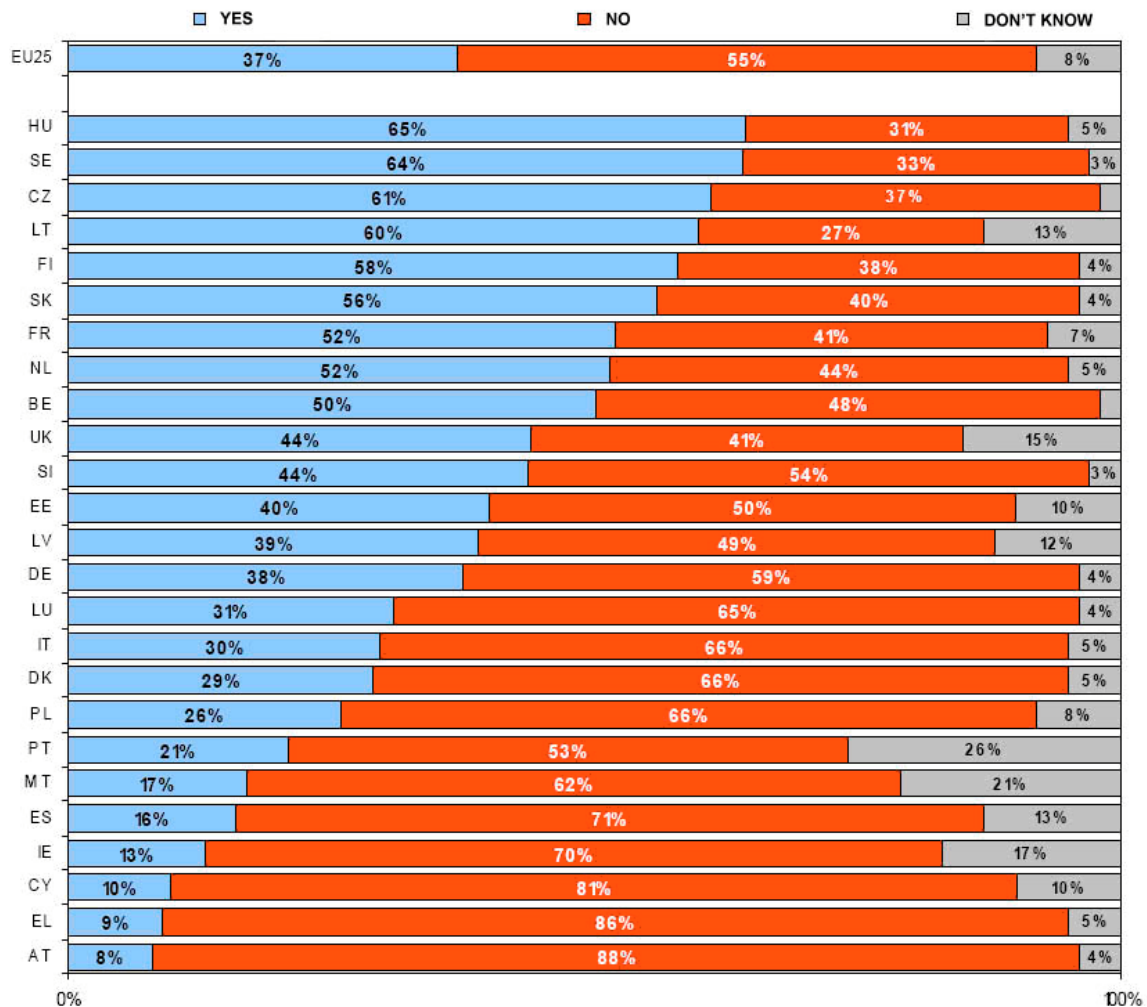


Fig. 6. Responses to the question: “Are you definitely for, rather for, rather against, definitely against the energy generated in NPPs?”

As may be seen, the Eurobarometer results indicate that in Poland 26% respondents support nuclear power option, 66% are against and the rest have no opinion on this issue.

In the European Union as a whole, 37% declared support for nuclear power, 55% were against and 8% had no opinion in this matter.

The discrepancy between the results of Polish opinion poll and these of the Eurobarometer requires some comment. Eurobarometer survey has been conducted by the TNS company, jointly with Polish OBOP studio (survey commissioned by the NAEA has been conducted by the PENTOR Institute).

It is possible that this discrepancy may be traced to the context of the question on nuclear power. In the Eurobarometer this was only one of a dozen questions, which in their majority concerned radioactive waste. Moreover this question was stripped of all national context: it was NOT a question related to the nuclear power in Poland.

In Polish survey the relevant question was: “In your opinion, should Poland prepare for the use of nuclear energy to meet national energy demand?” Moreover, it was one of a few questions, which in majority pertained to the problems concerning the presently used energy sources and meeting the energy demands.

Methodology used in the survey was similar to that used by OBOP in the surveys described above, but unfortunately, both surveys can not be compared due to the lack of sufficient information and data concerning the sample drawn for polling.

It may be thought that the final poll results could be influenced by the choice of the representation selected.

#### 4. Conclusions

Survey results presented above are not only very interesting but also very important. They are important for many reasons.

They demonstrate that the Poles’ opinions on the nuclear power option in our country are changing and – moreover – that the number of people inclined to accept the NPP construction in Poland is today larger than the number of nuclear power opponents. It is interesting that the rise in the acceptance of nuclear power is seen not only in Poland. A similar trend is observed e.g. in USA, Sweden and Finland. Survey’s results should facilitate the implementation of the decision to build a nuclear power plant in Poland by 2021-2022. It is possible that – contrary to the statement by one of the ministers – winning the public over to consent to the start of nuclear investments in Poland would not take as long as 5 years.

So what should be done in Poland in the nearest future? Above all one should take advantage of abundant experience gained in promotion campaigns conducted in other countries.

Nuclear power is being developed since almost 50 years; some countries have conducted extensive informational and educational activities. New means of communication with the public have been developed. At present in various countries worldwide promotional campaigns are being conducted in TV and on the billboards, paid announcements are inserted in the press, radio and Internet, leaflets and calendars are published, journalists’ visits to nuclear power plants and press briefings and exhibitions are organized, and public debates are conducted. In Hungary, to gain over the young people, “face to face” meetings are organized during rock music festivals. During a big event, in special booths, one may not only obtain information materials, but also talk to the experts.

Information activities in Poland should be addressed to the politicians and decision-makers, opinion-makers, media, medical and scientific communities, young people, women, electricity consumers, environmentalist communities and the whole public.

Information campaign program should include the following issues: why nuclear power is and will be a valuable, or perhaps even indispensable source of energy for the world; why nuclear power should be developed in Poland; nuclear power advantages from the environmental, economic and technical viewpoints; safety of nuclear reactors; management of radioactive waste and spent nuclear fuel; European public attitudes toward nuclear power.

Promotional activities should be conducted by the government agencies, and also by interested utilities, associations, educational institutions and research institutes, public relation agencies and media.

I am convinced that **full legitimization of the decision to build nuclear power plant in Poland can be gained through honest, reliable and comprehensive information and through broad, direct participation of the population in public debates.**