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port2007@ijs.si
www.nss.si/port2007
+386 1 588 5247, fax +386 1 588 5376
PORT2007, Nuclear Society of Slovenia, Jamova 39, SI-1000 Ljubljana, Slovenia

15 Years of Information and Educational Programme of Czech Power Company CEZ

Marie Dufkova

Czech Power Company CEZ, 140 53 Prague, Duhova 1, Czech Republic

marie.dufkova@cez.cz

ABSTRACT

The education program is the most important long-term communication programme of CEZ. It was established in 1992 shortly after an establishment of Czech Power Company. The support of education and talented students is doubtless a positive activity bringing a benefit to the company, especially in the field of nuclear energy. Students, who have been currently addressed with this program, are future consumers of electricity and as voters and politicians they shall decide on further development of power industry and nuclear installations. We care for them to make qualified decisions. CEZ has so far been the only Czech industrial company, which offers such program to schools. Education is the most important activity in the gaining support for nuclear energy.

TARGETS

- to increase the level of knowledge regarding nuclear both at children and youth and gradually at the wide public,
- to support the technical education and talented students, encourage an interest in study of energy (nuclear) fields and eventually in future employment with CEZ NPP,

COMMUNICATION OPPORTUNITIES

To prove the openness of ČEZ and its will to provide information about itself and the area of its business. To increase the popularity and publicity. To carry third parties in the area of pedagogical and academic public. To keep or increase a support for nuclear and sustainable energy mix.

RISKS AND THEIR ELIMINATION

Accusation that educational materials represent a promotion. We have eliminated this by a basic criterion of the program is a didactic quality of materials – the materials are developed in co-operation with pedagogues. They are highly appreciated by pedagogical and academic public, which uses and further promotes them. We provide information about positives as well as negatives of individual energy sources openly and motivate recipients of information to create an opinion.

RESEARCHES

Before the start of the program – finding out what schools need.

In 1995: verification of an acceptance of the program and first results (see the annex No. 1)

In 1996: pedagogical survey (see the annex No. 2)

In 2003 and 2004: verification of the effect of discussions with students (see the annex No. 3)

Comparison of results in 1993 and 2004 (see the annex No. 4)

Opinion poll on attitudes to nuclear in the CR, 2006 (see the annex 5)

STRATEGY

We offer the educational program of CEZ to all primary and secondary schools in the Czech Republic, co-operate with technical universities. We offered the program Energy for Everybody in the form of an offering catalogue, currently we have been offering it in preference through www.cez.cz/vzdelavaciprogram, at discussions at schools and through information centres of our power plants and through the magazine Treti pol (the Third Pole). Some parts (for example computer programmes, Encyclopaedia etc.) are offered through advertising.

The materials are used also for the wide public and are distributed specifically to the ones interested in being informed. The materials are sold for a symbolic price lower than the production cost or are provided to schools free of charge. They are available to company employees.

CONTENT AND ACTIVITIES OF THE PROGRAM

- Offer of materials for education (brochures, books, enclosures to textbooks, posters, computer programmes, CD ROMs, video films, web applications) for all age groups of youth. The student magazine Treti pol (the Third Pole) popularizing science and technology with the stress on energetics.
- Lectures and discussions about energetics at schools. Since 2000 we have been holding educational lectures and open discussions at schools. By June 2007 there proceeded over 2,500 lectures for more than 85 thousand students. We hold lectures and seminars for teachers - e.g. Autumn School – a week of lectures for pedagogues of secondary schools.
- Co-operation with selected university departments. Visit of students to CEZ nuclear power plants, temporary fellowships, supervising and help with diploma works, support to selected professional events.
- Support of talented students:
 - Competition of scientific and technical projects of secondary school youth (co-operation with Amavet), in 2007 14th year
 - CEZ Foundation Award – a competition of university students for the best scientific and technical work in energy fields, in 2007 8th year.
 - CEZ Award – a competition of diploma and doctorate works, for electric-technical and electric-energetic areas, in 2007 9th year.

PRESENT APPRECIATION

- Recommendation from the Association of Czech Mathematicians and Physicists for use at schools.

- Two of the CEZ films succeeded at the Techfilm 96 festival, the film Stopy budoucnosti (The Tracks of Future) was awarded the first prize in its category.
- The video Ziskavani slunecni energie (Collection of Solar Energy) was awarded a special prize at Ekofilm.
- The computer programme Energeticke zdroje Zeme (Energy Sources of Earth) was awarded the Duhova disketa of the Department of Education, Youth and Physical for the best educational software for schools of the year 1995.
- Joulinka, the multimedia program, was awarded the Best exhibit of the Schola Nova 1996 exhibition.
- The CD ROM Energy Encyclopaedia was awarded the prize of the Chip-Tip magazine for the best multimedia title of 1999 and the prize Computerworld 2000 excellent for the best multimedia Czech product,
- The Energy Encyclopaedia - Techfilm 1999 awarded a certificate of merit for graphics
- The Energy Encyclopaedia - won Duhova tuzka (Rainbow Pencil) of the Minister of Education in 2003
- Duhacek, the educational CD for natural science won the prize Zlaty strednik (Gold Column) 2005.

RESULTS

- See the results of carried out surveys.
- Tens of positive articles and broadcast in media per year.
- Increase of the attendance rate of information centres at CEZ nuclear power plants.
- At Colleges of Education were submitted already 4 diploma works of future teachers of Physics composed on the basis of our materials: they propose drafts of a physical seminary for secondary schools, educational materials about Physics, respectively about nuclear power, on the basis of CEZ materials.
- Many talented students, who participated in our competitions, have already work within the CEZ Group.

FURTHER DEVELOPMENT

Since 2005 we have been accommodating the CEZ educational program to the principle of new education concept. We develop methodologies and accommodate materials so they would be available for the needs of School Education Programs. The new concept of the CEZ education program enters the school process in form of the project called The World of Energy. We have established The World of Energy Club, which invites active teachers of Physics of primary and secondary schools and offers

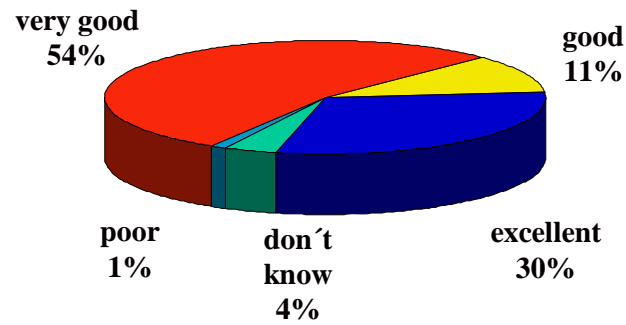
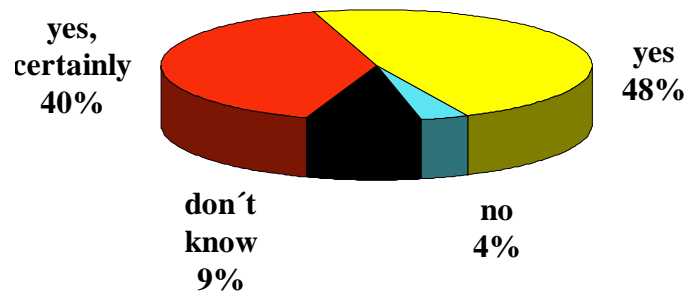
- privileged informing about news and prepared events
- seminars and meetings of specialists in the area of education, physics and energetics
- offer of exclusive visits to energy operations and to scientific places of work
- discounts to paid materials of the educational program
- co-operation with development of modern educational materials

REFERENCES

www.cez.cz/vzdelavaciprogram

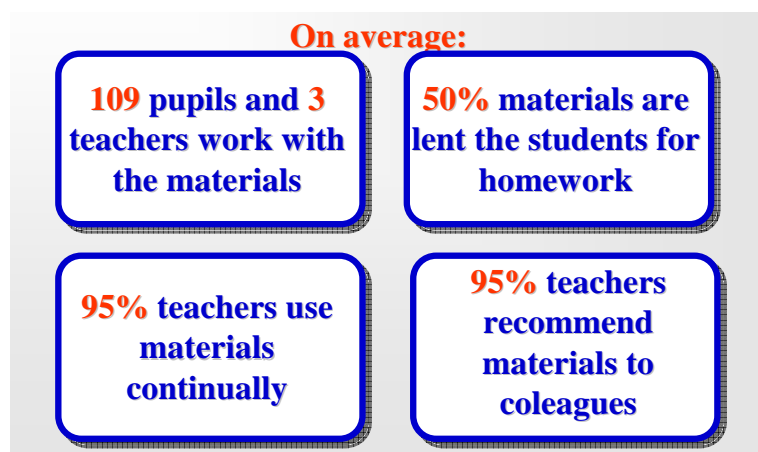
Annex 1

Opinion poll on 300 Czech schools run by Rapid DEMA agency in 1995:

Quality of the educational programme**Did pupil's understanding improve?**

Annex 2

The inquiry organised in 1996 at 300 schools where the CEZ materials are used revealed that on average over 100 pupils and 3 teachers at one school work with the materials, in 50 % of the cases the materials are lent the students for home study and preparation of essays (which implies that the parents get familiar with the materials as well), and 95 % teachers recommend them to their colleagues.



Annex 3

The opinion poll among students (from 1. 11. 2003 to 30. 6. 2004) followed a series of debates and lectures that the CEZ power company has been organising at schools within the framework of an CEZ educational programme. Opinion poll was managed by JLM Agency. The questionnaires were completed by a total of 3 290 respondents aged 14 to 19, half of them male and half female.

Results of analysis of the answers to the questions before and after the debate are as follows:

- Change (+10 %) after the debate in favour of the opinion that standard of living can not be improved without the energy consumption increase.
- Change after the debate (+12 %) in favour of the opinion that nuclear energy is a solution for energy problems of humankind. High share of the same opinion in Austria.
- Change after the debate (+6 %) in favour of the opinion that nuclear share in the CR should be increased. High number of Austrian students think the same.
- Change after the debate (- 6 %) - less worries from nuclear accident.
- Change after the debate (- 4 %) - less students refusing „nuclear electricity“.

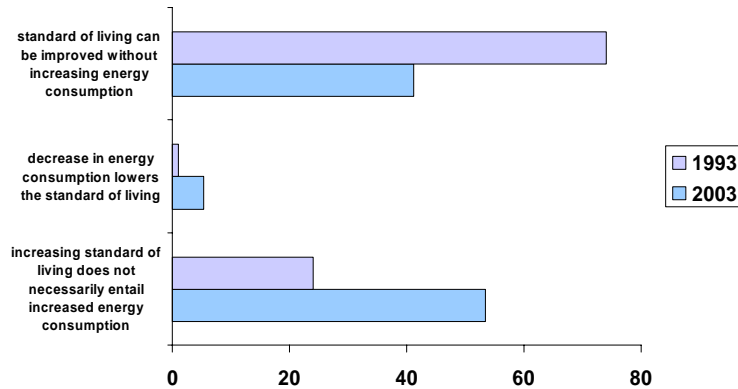
Summary of results in CR and comparison with Austria

	%	CR before debates	CR after debates	Austria after debates
The energy consumption had to increase if we were to improve our standard of living,		53,6	60	47,6
The standard of living can be improved even without increasing energy consumption		40,9	30	38,1
Which energy source do you regard as the final solution to the energy demand of humankind?		57	46,2	78,6
RES				
nuclear energy, fission and fusion		39	50,9	16,9
fossil fuels		4	2,9	4,5
Nuclear-power share in CR should be reduced		14,3	7,4	20,4
preserved		58	59	51,2
increased		27,7	33,6	28,4
Are you afraid of a nuclear accident in ČR?		29,7	23,6	48,6
yes, probably yes				
not, probably not		70,3	76,4	51,4
Do you prefer the electricity supply: cheapest available		44,1	49,6	25
without dropouts		48,4	47	35,2
not generated by nuclear		7,5	3,4	39,8

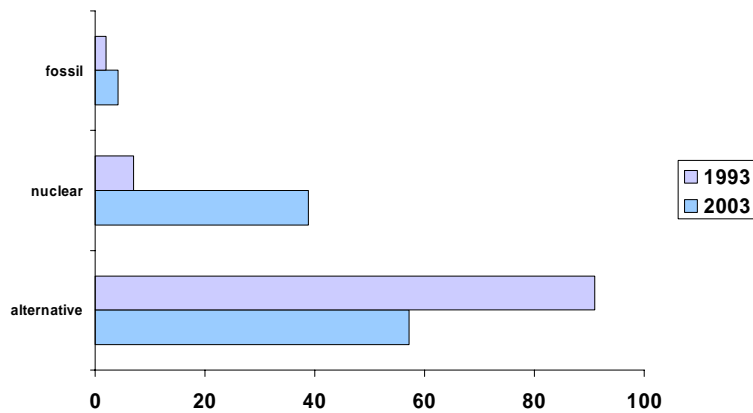
Annex 4

In 1992 and 1993, the Czech Republic hosted an international project aimed at surveying the knowledge and opinions of secondary school students. It was initiated by JAERO (the Japan Atomic Energy Relations Organization). The survey involved 1 030 students aged 15 to 18. The following charts show the comparisons between the results of the 1992 survey with the recent results.

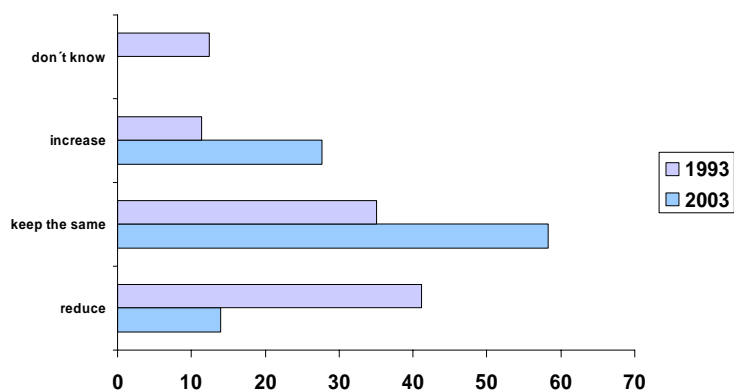
“connection between the standard of living and energy consumption“



“Which type of energy source has the strongest future potential?“



“share of nuclear energy industry in the Czech Republic“

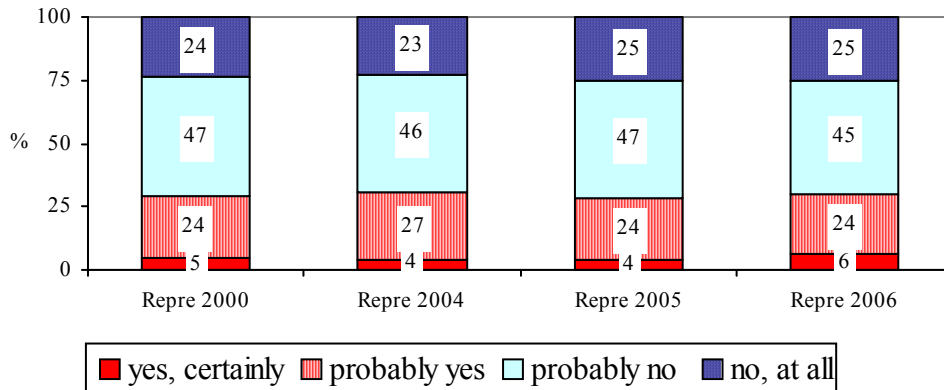


Annex 5

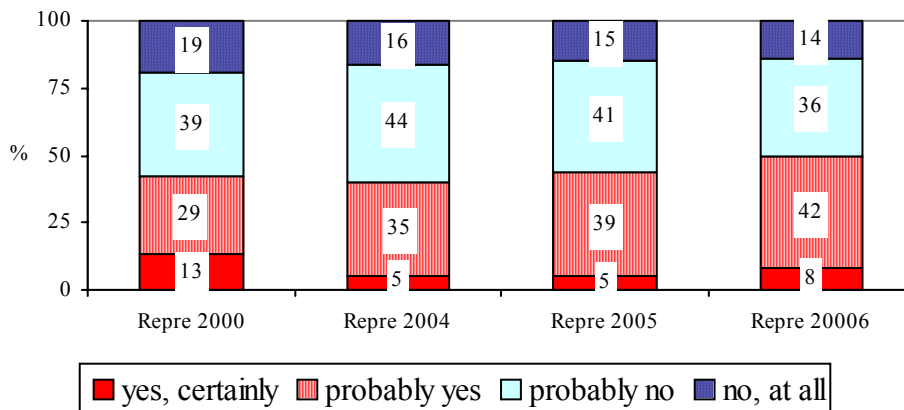
Opinion poll on attitudes to nuclear energy in the Czech Republic, STEM Agency, 2006, 1690 respondents, age 18+

„Do you, personally, have enough information about NPP Temelin and its environmental impact?“

"Máte Vy osobně dostatek informací o provozu jaderné elektrárny Temelín a jejím vlivu na životní prostředí?"



"Do you think that NPP Temelin is open to the public?"



Do you think that Temelin NPP is open to the public? (according to feeling that he/she has enough information)

