The Young in the World of Energy –
A Communication Project to Promote and Educate on Energy-related Topics Among the Younger Generations

Katja Bogovič, Tanja Jarkovič, Melita Lenošek Kavčič, Garsia Kosinac
GEN energija d.o.o.
Vrbina 17, SI-8270 Krško, Slovenia
katja.bogovic@gen-energija.si, tanja.jarkovic@gen-energija.si, melita.kavcic@gen-energija.si, garsia.kosinac@gen-energija.si

ABSTRACT

"The Young in the World of Energy" is a GEN energija-run communication project designed to promote the knowledge of energy and energy-related topics among the younger generations. The history of the project dates back to 2008, when the GEN Group launched its Energy-Efficient School project to encourage Slovenian schools to reduce their electricity consumption. Over the years the project grew and changed shape before finally evolving into the awareness-raising project "The Young in the World of Energy" with the opening of the interactive visitor centre The World of Energy in 2011.

As part of the project, two contests are being held in the 2012/2013 school year:
• A nationwide contest for Slovenian primary and secondary schools, which is run in association with the Eco-School ("Ekošola") programme and is designed to increase energy literacy and raise awareness of sustainable development in terms of energy and energy production; and
• The quiz "Young Wizards" on Energy Technologies and Nuclear Energy, organized by GEN energija in partnership with Krško Nuclear Power Plant.

The aim of the project is to encourage the young, through modern methods and media, to see the big picture behind energy and to gain an in-depth insight into the basic energy concepts, sustainable energy sources, climate change, radioactivity, and nuclear energy as a sustainable source of energy.

The paper presents the activities taking place in the framework of the two contests, the communication media used, and the final outcomes, achievements and findings of the projects.
1 INTRODUCTION

Energy, energy technology, and the challenges of shaping the future of energy are in the focus of public debates both in Slovenia and around the world. The success of large-scale energy projects largely depends on the perception, receptiveness and understanding of the general public. In this light, there is an increasing tendency to speak about and promote what is known as "energy literacy", a notion that represents an individual's understanding and awareness of energy sources, energy generation methods, types of energy use, and knowledge of responsible use of energy, or energy efficiency. It depends on an individual's level of energy literacy to what extent they will use energy sources responsibly, what their attitude to different energy sources (renewable sources, nuclear energy, fossil fuels, etc.) will be, and what standpoint they will adopt on the development or expansion of different forms of electricity generation (nuclear power plants, fossil fuel-fired thermal power plants, solar panels, wind parks, etc.). [1]

According to European and Slovenian opinion polls [2], the level of energy literacy among Slovenian population is rather low. While being relatively well informed on general topics such as the electricity market, consumption and volumes, Slovenes know little on the issues behind energy generation, energy efficiency, renewable (RES) and sustainable energy sources, the future of energy, and the country's investment capabilities.

An internal analysis of Slovenian primary and secondary schools' curricula and textbooks [3] showed that the subjects of energy and energy technologies are quite poorly covered by Slovenia's primary and secondary schools. In most cases, energy engineering merely gets a mention and its role in an individual's everyday life is addressed only superficially and, what is more, nuclear energy as such is even portrayed as extremely dangerous and life-threatening.

The youth is one of the most important target groups since they are the expert and development force of the future, which is why the GEN Group is fully aware of the fact that expanding the knowledge, awareness and interest at this level is absolutely essential to ensuring a bright energy future. In addition to its mission to provide a reliable production and supply of electricity, the GEN Group also endeavours to raise the level of energy literacy and interest in expert technical topics, particularly those involving energy.

Fig. 1: The prizewinning project of the Drska Primary School (the countrywide contest The Young in the World of Energy 2012/2013)
The subject of electrical power generation and engineering is relatively poorly covered by the Slovenian education system [3], this despite having well-defined starting points for properly addressing and teaching about energy, electrical power grid and nuclear energy. These starting points will need to be expanded or concretized and their focus shifted.

To this end, the GEN Group started building in 2008 strategic relationships with teachers, mentors and schoolchildren. That year the company GEN energija in association with its affiliated company GEN-I launched the Energy-Efficient School project to encourage Slovenian schools to reduce their electricity consumption. Over the years the project grew in terms of participating schools and the number of topics addressed and changed shape before finally evolving into the awareness-raising project called "The Young in the World of Energy" with the opening of the interactive visitor centre The World of Energy in 2011.

Deriving from the notion of energy literacy, the substance of the prize contest encourages primary and secondary school students to take an in-depth look at the whole story of energy, sustainable energy sources, basic energy terminology, climate change, nuclear energy as a sustainable source, and radioactivity.

However, the general mission of The Young in the World of Energy project is to educate, raise awareness and pique interest in sustainable energy sources and the different ways of generating electricity and to promote energy efficiency among school children and youths. [4]
3 THE PROJECT IN THE 2012/13 SCHOOL YEAR

The project "The Young in the World of Energy" ran on two tiers in the 2012/13 school year, employing two different range of activities to address target audiences at two levels: locally and nationally. Prepared and carried out were a countrywide contest for primary and secondary schools and a Posavje-region contest for eighth and ninth graders titled "Young Wizards".

Through project activities GEN maintains regular contacts with teachers of physics, technical sciences, environmental protection, and natural sciences in general. [5] Through the project, GEN not only establishes contact with Slovenian schools but also forges links with organizations and institutions engaged in similar or related fields of knowledge. For three years GEN and the Eco-School programme have been working in close collaboration on the countrywide contest, and the Posavje-region contest was organized in association with GEN's subsidiary Krško Nuclear Power Plant.

![Diagram](image)

**Fig. 3:** Structure of the awareness-raising project in 2012/2013

3.1 **Countrywide contest for primary and secondary schools**

The prize contest was open to all Slovenian primary and secondary schools, school centres, and halls of residence. Also eligible to enter were institutions participating in the Eco-School programme as well as other institutions not part of the programme. The contest was announced at the September 2012 conference of Slovenian Eco-School coordinators in Brdo pri Kranju, which included a presentation of project activities, planned tasks and corresponding timetables.

![Image](image)

**Fig. 3:** Presenting the project as part of the countrywide Eco-School project
GEN Information Centre played host to two important meetings in the context of the Eco-School programme, bringing together 42 mentors from 31 schools.

- 3 April 2013 – Regional meeting of primary school eco-coordinators from the Dolenjska and Posavje regions (preceded by a tour of The World of Energy)
- 5 April 2013 – National meeting of secondary school eco-coordinators (including a tour of Krško Nuclear Power Plant)

![Secondary school eco-coordinators on a tour of Krško Nuclear Power Plant](image1.jpg)

In the 2012/13 school year the contest was divided into three age groups, each with its own set of contest rules. Primary and secondary schools students explored the area of energy in various ways, trying to provide their view of the energy industry in as comprehensive a way as possible: what is energy, where does it come from, how is electricity generated and used, how were things in the past and how are they today, and how they imagined things would be like in the future. The students also got familiarized with the energy mix available in Slovenia, the properties of energy products, and the electrical power grid.

The contest closed in mid-May 2013: around 550 Slovenian youths from schools across Slovenia submitted some 220 entries (from art and multimedia to practical and research papers).

The closing ceremony for winning students and mentors was held at GEN Information Centre, Krško, on 11 June 2012.

![Some of the winners at the closing ceremony in Krško](image2.jpg)
3.2 The Young Wizards contest

"Young Wizards" is an energy literacy contest organized by the companies GEN energija and Krško Nuclear Power Plant (NEK). The contest was designed for eighth and ninth graders from the Posavje region primary schools.

As many as 19 primary schools from the Posavje region entered the contest (out of a total of 26 primary schools in the region), with 256 participating eighth and ninth graders. The project ran in various stages over six months. Following preparations for mentors and special workshops for participating students, each participating school held a school contest in February. Examination questions were prepared by the companies GEN and NEK and then handed to mentors before the internal school contests were held. The average score in the school contests was 26.5 points (out of a total score of 46) or 58%, which is a good result given the high level of difficulty of the examination questions.

Fig. 6: The "Young Wizards" school contest at one of the Posavje region primary schools

Based on the results of the internal school contests, each school selected three top-scoring contestants to represent their school in the finals, which was held at the Krško Community Centre on 23 April 2013. School teams met face to face on the stage of the Krško Community Centre and impressed with their knowledge a full house of fans. After three rounds, the winning title went to Raka Primary School, followed by Boštanj Primary School and Marjan Nemec Radeče Primary School.

The accuracy of answers and the smooth running of the contest were watched over by an expert panel made up of Igor Fifnja (NEK), Matjaž Žvar (NEK), Melita Lenošek Kavčič (GEN), Aleš Buršič (GEN) and Ivana Tršelič (FE UM).

Fig. 7: The "Young Wizards" final quiz in Krško
4 EXPERT TECHNICAL SUPPORT

As part of the communication project, a range of expert technical resources were prepared to aid the learning process. To facilitate working with youths, an e-learning centre with select resources for mentors was set up on the www.mladi-svet-energije.si website.

For the purpose of the contest, special teaching material was also made available to mentors on the following subjects: electricity is life, sustainable and renewable energy sources, energy efficiency, hydroelectric power plant, nuclear power plant, thermal power plant. The teaching material in the form of sheets containing overviews of individual subjects provided additional help and guidance to mentors.

![A sample teaching resource for mentors](image)

The biggest support to mentors was provided by none other than the Krško-based interactive centre The World of Energy, which showcases resources that partly or fully overlap with primary and secondary school curricula in the following subjects: technical engineering and technology, physics, natural sciences, energy engineering, and ecology.

5 COMMUNICATION SUPPORT

Various communication activities took place as well, from establishing contact via website to sending regular updates by e-mail. A large part of the communication was carried out by the Eco-School programme, which was in direct, regular contact with the participating mentors. News, updates and promotional material were posted on a regular basis.

Apart from direct communication with target groups, select media were employed as additional awareness-raising tools (specialized printed media, TV shows on energy for youths, local media, websites and, in particular, fast-growing social media, which have a direct and immediate effect).

!["The Young in the World of Energy" website](image)
CONCLUSION

The communication project "The Young in the World of Energy" plays an essential role in raising awareness and understanding of energy and the energy industry among Slovenian youths. Existing teaching resources contain little in the way of a comprehensive overview of energy and the energy industry and appropriate presentational materials on the subject in question. So, for the time being, prize contests, competitions and elective subjects seem to be the only way of bringing the energy industry and technologies closer to young people and inspiring them in this field of knowledge.

REFERENCES

[1] Investment Programme for GEN Information Centre, GEN energija d.o.o., 2010


[3] Internal analysis of curricula and textbooks of Slovenian primary and secondary schools; Consensus d.o.o., 2013
