ENVIRONMENTAL EDUCATION WITHIN THE 10TH LATVIAN YOUTH SONG AND DANCE CELEBRATION

VIDES IZGLĪTĪBA X LATVIJAS SKOLU JAUNATNES DZIESMU UN DEJU SVĒTKU IETVAROS

Alise Berzina, assistant in scientific work, M.sc.
Riga Technical University, Institute of Energy Systems and Environment
Address: Kronvalda blvd., LV-1010, Riga, Latvia
Phone: +371 679089923, Fax: +371 679089908
e-mail: alise.berzina@rtu.lv

Elina Dace, researcher, M.sc.
Riga Technical University, Institute of Energy Systems and Environment
Address: Kronvalda blvd., LV-1010, Riga, Latvia
Phone: +371 679089923, Fax: +371 679089908
e-mail: elina.dace@rtu.lv

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Working group of Institute of Energy Systems and Environment (IESE), Riga Technical University, set up an educational stand within the 10th Latvian Youth Song and Dance Celebration. There were three key topics - energy efficient lighting, solar and hydrogen power, as well as air pollution with fine dust particles. Visitors could learn about the different technologies and measuring equipment related to these topics.

Energy consumption of incandescent and analogue compact fluorescent (energy efficient) light bulbs was compared on the lighting stand. This test rig has been demonstrated to visitors to show what is the difference of the bulbs, when one or another kind is used in a household. This educational campaign would promote energy efficiency in households. At the lamp stand people could get information about measures, which could help on power saving at home. Replacing incandescent bulbs with compact fluorescent bulbs in a house luminaries, where the light is required for longer periods, can reduce power consumption by up to 80%[1]. Also, visitors were informed about legislation related to distribution of incandescent bulbs. The prohibition to distribute 100-watt incandescent bulbs has come into force in all European Union (EU) countries (including Latvia) from the 1st September of 2009[2]. From the 1st September of 2010 there is forbidden to produce and market 75-W incandescent bulbs, and from year 2012 – also incandescent bulbs of lower wattage.

Wind tunnel test rig was created to determine whether and to what extent the dust from coal piles can be reduced. Contamination by particulate matter is causing public attention only in the case of acute environmental problems. Mostly the air pollution with particulate matter is not visually identifiable, therefore, usually there is no protection against it. Consequently, the population may be exposed to long-time low-level pollution, of which effect can be as serious as from a short exposure of high concentrations. This means that the citizens of Latvia are not sufficiently aware of the hazard particulate pollution can

[1] Ozoliņa I. Elektrības un naudas taupīšanai. Latvijas Avīze. - 2009.gada 14.oktobris

[2] Par Eiropas Parlamenta un Padomes Direktīvas 2005/32/EK īstenošanu attiecībā uz mājsaimniecībā izmantojamām kliedētas gaismas lampām: Komisijas Regula Nr. 244/2009 // Eiropas Kopienu Oficiālais Vēstnesis. – Nr. 76. (2009. gada 18. marts)

cause. The main aim of showing the wind tunnel was to inform the people to be aware of air pollution by particulate matter and to pay attention if there are no offences against the law, for example, in the territory of cargo port. Everyone was able to find out how the dust particles from piles come into the air if they are affected by wind. Examples of materials placed in the wind tunnel were sawdust and sand. By using aerosol photometer it was possible to measure changes in the concentration of dust in the air, depending on wind speeds. A powerful fan with adjustable rotation speed ensured different wind flows in the wind tunnel.

On the renewable energy test rig people were informed about the possibilities to use solar energy and hydrogen power. Such a technologies as solar cell and hydrogen car were demonstrated. Solar cell is a device that converts the energy of sunlight directly into power by the photovoltaic effect. In the test rig the solar cell powered a small fan, so that people could see that it is possible to generate power from the sun and that it works in practice. A hydrogen vehicle is an alternative fuel vehicle that uses hydrogen for motion. Hydrogen is produced in the process of electrolysis, splitting water into oxygen and hydrogen. Electrolysis process is provided by the solar battery placed in the model. The power plant of this vehicle converts the chemical energy of the hydrogen to mechanical energy by reacting hydrogen with oxygen in a fuel cell to run the electric engine. The greatest attention of visitors, especially children, was paid to the model of hydrogen vehicle.

Participation in the 10th Latvian Youth Song and Dance Celebration by demonstrating the three above mentioned test rigs gave an opportunity to inform great number of people, especially children and youth, about different aspects of energy efficiency, renewable energy sources and air pollution with particulate matter. Since people nowadays have to face more and more environmental aspects and problems in their daily lives, this kind of non-formal education helps to explain our influence on the environment, as well as influence of pollution on our health. It is important to understand these interactions to mitigate and prevent harm to environment in the future. This was a successful experience, therefore we suggest including such informative and educational campaigns in other similar events as well.

Berzina A., Dace E. Environmental education within the 10th Latvian Youth Song and Dance Celebration

Working group of Institute of Energy Systems and Environment (IESE) set up an educational stand within the 10th Latvian Youth Song and Dance Celebration. There were three key topics - energy efficient lighting, solar and hydrogen power, as well as air pollution with fine dust particles. Visitors could learn about the different technologies and measuring equipment related to these topics. Since people nowadays have to face more and more environmental aspects and problems in their daily lives, this kind of non-formal education helps to explain our influence on the environment, as well as influence of pollution on our health. This was a successful experience, therefore we suggest including such informative and educational campaigns in other similar events as well.

Bērziņa A., Dāce E. Vides izglītība X Latvijas skolu jaunatnes dziesmu un deju svētku ietvaros

Vides aizsardzības un siltuma sistēmu institūta darba grupa X Latvijas skolu jaunatnes dziesmu un deju svētku ietvaros izveidoja izglītojošu stendu, lai informētu iedzīvotājus. Stendā tika apskatītas trīs tēmas – energoefektīva apgaisme, saules un ūdeņraža enerģija, kā arī gaisa piesārņojums ar sīkām putekļu daļiņām. Apmeklētājiem bija iespēja iepazīt dažādas tehnoloģijas un mēriekārtas, atbilstoši iepriekš minētajām tēmām. Kopš iedzīvotājiem mūsdienās nākas arvien biežāk saskarties ar dažādiem vides aspektiem un problēmām savā ikdienas dzīvē, šāda veida neformālā izglītība palīdz izskaidrot mūsu ietekmi uz vidi, kā arī piesārņojuma ietekmi uz mūsu veselību. šī bija veiksmīga pieredze, tādēļ iesakām šāda veida informatīvās un izglītojošās kampaņas iekļaut arī citos līdzīgos pasākumos.