

“Vodorodny vseobuch” in MEE (municipal educational establishment)

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The ecology movement of schoolboys in the city Asha of the Chelyabinsk area began on May, 31, 2005 when three brothers Ustselemovy got acquainted with a site of Hydrogenous club MIREA and got to know that in the future hydrogen is expected to be the main fuel with non-polluting properties because water is formed during its combustion.

Then other schoolchildren joined them; the school administration supported this children's hobby. The pupils began to correspond with Hydrogen club MIREA and in July 2005 they met with its co-chair Grigorjeva Nina who presented manuals “Energy of the future”, “Vodorodny vseobuch” journals and “Vodorodovorot” newspapers to school.

At school the education system was developed which should provide preparation of rising generation for fulfillment of scientific and technical advance which would reduce in ecologically harmless environment, in power safety and stability, in struggle for people's health, in stable development of society. Pupils take part in school conferences; some lessons of physics and chemistry are devoted to basics of hydrogen energetic. At the same time teachers and pupils thought about problems of ecology of Asha and its environs. So there was a project implemented entitled “Waste products to wood chemistry — energy to metallurgists — ecology to inhabitants” marked with a diploma in a schoolchildren nomination at the first international forum “Hydrogen technologies for production of energy” in February 2006 — official action within the framework of the Russian Federation's G8 presidency in Moscow.

The pupils of our school investigated a role of negative effects, the poisonous emissions of motor transport on environment. The joint research of a school ecological team and ecological committee and environmental control of city studied motor transport effects on the environment. The number of autos increases every year. At seminar “Development of vehicles as means of transportation, its influence on the ecosystem and on health of people” the following data was made public: emissions of harmful substances from cars for a year amount to 4,570 thousand tons, of them 0,430 thousand tons of nitric oxides; 0,497 thousand tons of hydrocarbons; 0,0394 thousand tons of sulfur dioxide; 0,00288 thousand tons of carbon black.

And all these emissions effect all 30 thousand town inhabitants. What are the consequences of the environmental pollution for them? The consequences are the following: pollution in the city Asha and region is considered to the cause of different diseases people suffer from, first of all, those of a respiratory organs, especially bronchial asthma. In Ashinsky region for the last year about 150 people were effected by diseases of this pathology, of them — 103 children (within the age group — from birth to 14 years old); 36 teenagers (within an age group — from 14 till 17 years old).

And there is also Ashinsky metallurgical plant with its waste products... Now we its “gifts” to the city include a smoke, sewage (river Teplushka), heaps of waste.

In summer 2007 there was a strong opposition between city inhabitants and administration of the plant that decided “to kill two birds with one stone”: there was suggested a cost-effective method — to cover riverbanks of the Sim-river with slag, lifting their level to prevent spring overflows. But nobody thought of making a preliminary analysis of aqueous extracts from slags, its ecological impact on flora

and a fauna. (Earlier these riverbanks have been covered with the gravel taken from the same river).

But there are good things now.

1. The ecological team of the school with support of their parents and citizens of the city and regional television managed to stop disposal of wastes on riverbanks.
2. The administration of the plant thinks of negative effect of a factory on environment last years and tries to reduce it. So, transfer of a factory power generation system from black oil to natural gas has been completed. The chairman of the board of directors of OC "Ashinsky metallurgical plant" V. D. Kozhevnikov met with the principal of Hydrogenous-ecological club MOU SOSH (MEE SES) № 9. Ustselemov L. in the study (at this meeting the co-chair of Hydrogen club MIREA Grigorjeva N. was present who handed over to the director a journal " Hydrogen vseobuch " and a book " Energy of the future "). During half-hour conversation V. D. Kozhevnikov told about plans of the factory to replace black oil with natural gas, and discussed use of synthesis gas or hydrogen in details. For this purposes he plans to enclose Martin production (steel production in Martin furnaces with black oil being preheated) and wants to set up electric furnaces. The director is ready to consider all designs which will lead to saving energy and replacement of natural gas with hydrogen.
3. The express means of sanitation of exhaust gases are positioned on motor transport of city. It allowed to reduce pollutant emissions in an atmosphere by 3%. Transferring of cars to gaseous fuels is planned in order to further decrease of poisonous emissions from motor transport in city. Today some gas stations are being opened in Asha. But neither new filters, nor improvements in design of engines are used, so neither growing number of gas-resistant plants, nor gas stations will help. Some radical solution is required! And such a solution, in our opinion, is transition to completely new non-polluting fuel — to hydrogen!
4. On February, 4, 2007 ecological conference took place at school. The reports about it were shown on local television ATV-12 and published in the city newspaper "The Steel spark". Some senior pupils prepared reports on ecological issues. At this conference chairman of Hydrogen club of school Ustselemov L. was presented with a gift from his father Vladimir Vladimirovich – a model of the sun-hydrogen car that will serve school as the manual for 40 experiments in Physics, Chemistry and Ecology. And Leo told that he would present a new project at the second international forum on hydrogen energy and hopes for a new meeting with professor Sigfusson who was awarded with an international award established by Russia – "Global energy" award last year.