

# GREEN NEWS

information - environmental newsletter

2 (12)



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# ours rubrics



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# Belarus joined Kartahen protocol on biosafety

In the recent years, a rapid development of the biotechnology is observed, in particular, a development of the principally new types of agricultural crops and medicinal cultures with the aid of the genetic engineering methods, and with the introduction of highly efficient genes from systematically very different types of plants, animals, micro-organisms, and viruses. The tests have been completed and the wide application of live genetically modified organisms (GMOs) of the most important agricultural crops has been started. Such organisms can possess stability to toxic substances (herbicides, heavy metals), viruses, or insects. However, in spite of the evident advantages of the live GMOs, it is not excluded that their use can cause negative impacts on the environment nor on the health of human beings.

In the context of preservation and sustainable use of the biological diversity, the most important possible unfavourable impacts include:

- the destructive impact on biological communities and loss of valuable biological resources as the result of polluting of the local brands with the genes transferred from the GMOs;
- creation of new, more harmful parasites and weeds, and increased harmfulness of the already existing ones;
- production of the substances, which can be toxic for the organisms, which are not their targets, e.g. animals being fed with the GMO-fodder.

In Belarus, the GMOs have not been used widely, yet. However, due to the geopolitical position of the Republic of Belarus, transportation of large quantities of transgenic organisms and products will be carried out in future to Russia and to other CIS states.

Taking into account the rapid development of biotechnologies and the regulation of the import and

the use of the products of the live GMOs fixed in the rules and standards, the problem of bio safety is real for the republic.

According to the Agenda 21 adopted at the UN Conference for Environment and Development held in Rio de Janeiro in June 1992, the governments of the participant states of the Conference assumed obligations to consider the problem of the economic co-operation for ensuring the safety in the field of biotechnology. This obligation foresees exchange of experience and reaching an agreement on the international level about principles of bio safety provision.

The problem of the provision of bio safety in the field of biotechnology is also considered within the frameworks of the UN Convention on Biodiversity.

Within the framework of execution of requirements of the Convention Biodiversity a draft Law of the Republic of Belarus “On Joining the Kartahen Protocol of Biosafety to the Convention on Biodiversity by the Republic of Belarus” has been prepared and agreed with the interested parties and is going to be introduced for consideration of the Government in the near future. The information on the course of fulfilment of the Kartahen Protocol for Biosafety in Belarus has been prepared and directed to the UNEP Secretariat.

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The participation of Belarus in the given Convention dictates the necessity of creation of a biosafety system in the country in compliance with the international rules and standards.



The main provisions of the Convention on Biodiversity (article 8, 16, 19 etc.) are directed to prohibition of the non-controlled release of live GMOs to the environment, which capable of unfavourably impacts on the preservation and the sustainable use of the biodiversity.

The system of biosafety within the framework of the requirements of the Convention on Biodiversity includes four main sections:

- legal aspects of biosafety;
- access to genetic resources;
- transfer of biotechnology's;
- Distribution of profits related with the use of biotechnology.

Due to this, the conference of the parties of the Convention on Biodiversity at its extraordinary meeting in Montreal (Canada) adopted a protocol on biosafety on January 29, 2000. The protocol was called "The Kartahen Protocol on Biosafety" to the Convention on Biodiversity".

Participation of delegations of the Republic of Belarus at preparation and adoption of the Protocol contributed to its text with the provisions in the interest of our republic and of other states with the transit economies.

The main goal of the Kartahen protocol consists of assisting to provision of the proper protection level in the field of the safe transfer, processing, and use of live GMOs which are capable of causing unfavourable impacts on preservation and the sustainable use of biological diversity, also taking into account the risks for health of the human beings and by paying the special attention to the transborder transportation.

The important provision of the Protocol consists also in application of the procedure of the importing & transit countries' consent in good time for importation or transit through its territory of the live GMOs intended for introduction to the environment. The parties undertake to take necessary measures for the transborder transportation of the live GMOs along with observance of the safety measures and taking into account the international rules and standards for prevention of the unfavourable impact

on preservation and sustainable use of biological diversity.

The given agreement on biosafety in the field of biotechnology sets no limits for the state in its possible ways of getting profits from the biotechnical production.

The Protocol also foresees that the parties (countries) with transition economies may receive financial and technical support by bilateral, regional and multilateral channels for execution of its provisions.

The Secretariat of the Convention on biodiversity will act as the Secretariat of the Protocol on biosafety and will carry out its activities within the rules and procedures of the Convention. So, the working body for implementation of provisions of the Kartahen protocol has been formed, and signing of this protocol by the Republic of Belarus will not require additional financial expenses.

Taking into effect the fact that the Kartahen protocol was made within the framework of the Convention on biodiversity, and the Republic of Belarus is a party of this Convention, signing of the Kartahen protocol by our country is a legitimate step on the way of implementation of the requirements of the Convention. This plays an important role for approval of Belarus as the full member of the world community and an active participant in resolution of global ecological problems.

*Source:*

***Information department of the Ministry of Natural Resources and Environment Protection of the Republic of Belarus.***

## Conventions signed and ratified by Republic of Belarus

- The Convention on the Long-Range Transboundary Air Pollution.
- The Protocol to the Convention of 1979 on the long-term financing of the joint program for monitoring and evaluation of pollutants' transfer to big distances in Europe (EMEP).
- The Protocol to the Convention of 1979 on the limitations of sulfur effluents and their transboundary flows at least by 30%.
- The Protocol to the Convention of 1979 on the control of nitric oxides effluents and their trans-frontier flows.
- The Vienna Convention on Protection of the Ozone Layer.
- The Montreal Protocol on the Ozone Depleting Substances.
- The London amendment to the Montreal Protocol.
- The UN Convention on Biodiversity.
- The Convention on the international trade of specimens of the wild fauna and flora which are under the threat of disappearance (CITES).
- The Convention on the access to information, participation of the public in processes of taking decisions and the access to justice referring to the environment.
- The Convention on the control of the transboundary transportation of harmful wastes and their disposal (the Basel Convention).
- The Ramsar Convention.
- The UN Framework Convention on Climate Change.
- The Convention on evaluation of the impact on the environment in the trans-boundary context. (Espoo Convention)
- The Helsinki Convention on the Baltic Sea (supervisors).

Source:

**Ministry of Natural Resources and Environment  
Protection of the Republic of Belarus.**

[www.president.gov.by/minpriroda/index.htm](http://www.president.gov.by/minpriroda/index.htm)

## Justice in light of Aarhus convention

The 7<sup>th</sup> annual conference (Guta 7) of lawyers-ecologists was held in Lvov, Ukraine on June 3-5, 2001. The lawyers and ecologists that took part in it came from Central and Eastern Europe and CIS. The first such kind of conference was held in the Ukrainian town Guta in 1995. At the fourth conference in 1988 in Wroslav (Poland), the participants decided to establish the Association of the Ecological Law of the countries of the Central and Eastern Europe and CIS.

At the 7<sup>th</sup> conference, the problems of both regions were discussed in the area of the access to justice in

the light of provisions of the Aarhus Convention. Presently, the Convention has been ratified, joined or approved by the following countries: Azerbaijan, Belarus, Denmark, Georgia, Kazakhstan, Kirghizstan, the Republic of Moldova, the former Yugoslav Republic of Macedonia, Turkmenistan, and the Ukraine.

Albania, Armenia and Italy informed the Secretariat of the Convention and the UN General Secretariat that the ratification or joining procedure was completed at the national level. Hungary, Poland and Slovenia are approaching. So, it is supposed that



the Aarhus Convention will enter into force during the second part of the year 2001. and in the autumn of the year 2002 the First Conference of the Parties of the Aarhus Convention will be held.

Just that is why all problems related with its application, and moreover, with the access to the national procedures of appeal or protection of the violated rights of citizens for obtaining the ecological information, for participation in taking the ecologically important decisions, have become more urgent. This is all the more important as the third component of the Convention – Chapter 9 “The access to justice” is the required instrument. Otherwise, all the other chapters will be ineffective.

In September 2001, in Tallinn an international seminar will be held for the officials dedicated to the access to justice on the issues referring to the environment. For this seminar, as well as for the further activity of the Special Working Group, established in 2000 at the second meeting of the countries-signatories of the Aarhus Convention, it was decided to prepare and issue the guidance with the description of the specific judicial or administrative cases, with the summary of the legal standards and practice of the access to justice in the countries of the European Ecological Convention of the UN.

The participants of “Guta-7”, the members of the Association of the Ecological Law – lawyers from Armenia, Belarus, Hungary, Moldova, Russia, USA, Uzbekistan, the Ukraine, Estonia with the participation of the official of the Aarhus Convention Secretariat, Sofia Flensburg, the official of the Ministry of Environment, Transport and Regions of the UK, Kairo Robb, the officers of the Regional Ecological Center of the Central and Eastern Europe, the American Association of Solicitors, the members of the European Eco-Forum provided interesting examples of addresses of citizens and NGO to the courts or administrative bodies of their countries for protection of rights for the access to the ecological information. The problems of proceedings were described which the citizens and NGOs, as well as the results of each case faced.

In the process of the hot discussions, indicators were segregated according to which one can try to compare the access to justice in the countries of the region of the UN- Economic Commission of Europe

with various legal systems. For example, this is the adequacy of means of the legal protection, their accessibility, relatively low cost, accessibility of expert services for the public, limitation of the right of appeal to the court concerning the environment, the amount of judicial fees and expenses, necessity of releasing the tax burden for the NGO. There were also discussions about the appropriateness of creation of the system of special ecological courts – “tribunals”, introduction and development of the institution of the ecological “ombudsmen”, as in some Scandinavian countries.

Problems typical for the post-Soviet territory were pointed out, such as corruption, absence of the independent juridical system, lack of competence and low ecological and legal consciousness of the officials and judges, lack of the state support of professional organizations which defend the public ecological interests, absence of incentives for the citizens and NGO protecting the nature in the proceedings, etc.

The alarmed Association members noted that the practice of so called “strategic claims against the public participation” is developed, when the polluting corporations against which the citizens try to act by means of the legal methods are using the provisions fixed in many legal systems on recovery of their losses and the lost profit from ecologists-activists or lawyers protecting their interests in courts by ruining them or threatening with bankruptcy. Some recommendations were planned for improving the situation, which will be stated in the prepared guidance. The total approval by the participants referred to the phrase which is to be put to the beginning of this guidance: “A more active participation of the public in the process of taking the decisions makes them the decisions of the public by resulting in reduction of the number of proceedings in the court”. This phrase mainly reflects the essence of the Aarhus Convention, its role in development of the democratic institutions of our countries.

*Apply for the additional information to:*

**Olga Razbash,**

*“Ecology and protection of human rights”*

**E-mail: [jureco@netclub.ru](mailto:jureco@netclub.ru)**

*The information service “Eco-Accord”*



## Dirtiest..

There is an opinion that the bigger the city is in population, the more polluted it is. Let us consider to what extent this opinion complies with the reality being based on the data of various studies conducted by ministries and agencies.

### What do we breathe?

Since 1998, the State Meteorological Committee of the Republic of Belarus has proceeded with the monitoring of the state of the air in 16 industrial cities of the republic. 50 stationary stations performed observations 3-4 times per day referring to 26 hazardous substances. For evaluation of the air quality limit allowed concentrations of contaminants and the complex index of atmosphere pollution set up by the Ministry of Health Care were used.

Atmosphere is a dynamic medium, therefore the contents of contaminants in it changes not only with the seasons but also during a day. On the basis of the studies during many years and in the period of the industrial growth it was stated that the biggest average annual dust concentrations were noted in Vitebsk, sulfur dioxide - in Orsha, nitrogen dioxide - in Mogilev, carbon disulfide - in Mogilev and Svetlogorsk, phenol - in Gomel and Mogilev, formaldehyde - in Brest and Bobruisk. The biggest maximum single dust concentrations were registered in Grodno (5 times higher than the allowed concentration, sulfur dioxide - in Polotsk (20 times higher than the allowed concentration), carbon monoxide - in Minsk (5 times higher than the allowed concentration), nitrogen dioxide - in Mogilev and Svetlogorsk (10 times higher than the allowed concentration), hydrogen sulfide and carbon disulfide - in Mogilev (14-17 times higher than the allowed concentration), ammonia - in Novopolotsk (4 times higher than the allowed concentration), phenol - in Mogilev (10 times higher than the allowed concentration), formaldehyde - in Vitebsk (3 times higher than the allowed concentration). As the result of the above, about 2.14 million citizens are under impact of concentrations of hazardous substances by five-eight times higher than the limit allowed concentration.

If we take the integral index of atmosphere

pollution for several contaminants the most unfavorable situation is observed in Mogilev, Mozyr, Vitebsk, Bobruisk (the indices of atmosphere pollution are equal to 8.8, 8.6, 8.3, and 6.3 respectively). The level of air pollution is considered high if the index of atmosphere pollution exceeds seven. In recent years the analysis of levels of atmospheric air pollution in unfavorable conditions showed that one or more single concentrations of hazardous substances were higher than the limit of the allowed concentration in all studied cities. But in 1998 pollution levels 10 times above limits were not pointed out. By the present time, pollution of the air has been noted in Mogilev, Minsk, Svetlogorsk, and Novopolotsk. This is the result of operation of enterprises of the chemical and petrochemical industries. In Belarus the biggest gross effluents to atmosphere took place at the Novopolotsk Production Association "Naphtan", Lukoml Hydro Power Plant, Mozyr Refinery.

The State Meteorological Committee also makes an analysis of the state of water objects of the Republic of Belarus. 78 water objects in 105 settlements and 163 ranges in river basins are observed. The integral pollution is evaluated with the index of pollution of natural waters taking into account the presence of 6 criteria pollutants. We will give examples of the three most contaminated rivers by some substances mentioning the concentration in multiples of the allowed concentration. For contamination with petroleum products: Zapadnaya Dvina near Novopolotsk - by 4.2 times, Svisloch near Minsk - 2.2 times; Mukhovets near Brest - 1.3 times; for contamination with nitric products: Svisloch near Minsk - 5.4 times; the Dnieper near Mogilev - by 2.8 times; Zhadunka near Kostuykovichi - by 1.9 times. The index of water pollution in the three most contaminated rivers of Belarus constituted respectively: Svisloch (Minsk) - 3.5, Berezina (Svetlogorsk) - 2.1, Zapadnaya Dvina (Novopolotsk) - 1.6. Increased manganese concentrations - by 27 times allowed concentrations - were observed in Zapadnaya Dvina, increased phenol concentrations - by 3-5 times higher than the allowed concentrations - were observed in Berezina that flows through big industrial centers as Borisov, Bobruisk, Svetlogorsk.



The excessive contents of iron and copper are observed in the Dnieper and Neman. Obviously, the main reason of the pollution is the operation of the enterprises of petrochemical industry and machine engineering.

## Soil contamination

The analysis of the soil contamination needs expenses and it is somewhat more complex than the analysis of the gas and air mediums or water objects. Therefore, it is difficult to perform the global monitoring of the soil cover in all cities of Belarus. Among the cities where the analysis by the State Meteorological Committee was made for 1998, the most sulfate-contaminated soils were noted in Luninets and Drogichin. The zinc contents exceeded the background level in Volkovyssk by 4.5 times, in Buda-Koshelevo – by 4.4 times. According to the available data the following biggest average contents in soils in mg/kg are noted: cadmium – in

Novogrudok – 0.97; zinc – in Volkovyssk – 57.8; lead – in Drogichin – 20.8; copper – in Baranovichi – 9.7; nickel – in Dobrush – 7.9. The biggest summary feature of soil contamination has been noted for Volkovyssk. One of the possible reasons of soil contamination is operation of the enterprises of the construction industry and machine building, effluents of the automobile transport.

So, according to the considered data the most contaminated air is in Mogilev, the surface water – in Minsk, the soil – in Volkovyssk. But the integral features have made the given conclusions. If we consider the contamination by individual substances the most diverse cities and town of Belarus can be distinguished.

*By Vitaly Lipik,  
post-graduate student of the department of  
industrial ecology, the Belarusian State  
Technological University, "OPEN BY"*

## Lessons of pureness

Starting from January 9, 2001 “garbage” teams have been wandering around the city of Minsk. Do you think they are the united teams of cleaners? No, you are wrong. It is just the association “Ecological Initiative Belaya Rus” that started its educational campaign for Minsk schools “Propaganda of the Separate Waste Disposal”.

Within the framework of the campaign, the volunteers of the “Belaya Rus” conducted classes at schools once every second week on the topics of solid household waste and separate waste disposal. We explained why this topic is so urgent, and how pupils can contribute to resolution of this problem. 4 Minsk secondary schools are taking part in implementation of this program: No. 33, 77, 95 and 214. Groups each consisting of 15-20 persons has been organised in this connection and they study the issue on a permanent basis.

We worked out 8 lessons to explain the essence of the problem in our country and abroad to boys and girls. We try to prove for them that the resolution of the problem depends not only on the standing of the state bodies and services, but also on each person individually. Although our classes are intended for 45 minutes these are not mere lessons. Each lesson

is accompanied with a discussion when we all together try to work out some rules, which will help to reduce the volume of the household waste.

Our lessons are intended to form a new approach by children to the current and future life, which is essentially different from the approach of the previous generations. We can not get the result of our work today, but even if one representative from every school thinks of whether to buy milk in a pack or in a recycled bottle, this will already be a result.

We are sure that the lessons of pureness will not pass without a trace, and in future the seeds will sprout that have been sown today.

*Elena Gavrilova*

If your school would like to join the educational campaign “Propaganda of the Separate Garbage Disposal”, please, apply to:

*Elena Gavrilova*

*Yuliya Vazhnik*

*Olga Chudakova*

phone: 231 30 52





## Strategic meeting took place

On June 15-17, in Minsk the national strategic meeting of ecological societies of Belarus took place – the first meeting within the framework of the “Miliokontakt Ost Europe” program. More than 60 non-governmental organisations working in the field of the environment protection took part in it.

Many problems were to be discussed at the meeting. We, the organisers, just had not time enough to include to the program all we wanted to discuss with the representatives of the ecological movement of Belarus. We wanted to provide to the participants as much information as possible on international processes, for example, the Sustainable Development and Rio+10, (see a more detailed description of the process in the end of the section of the documents of the meeting), the Environment for Europe, implementation of the Aarhus Convention. At the same time we would like that the process of consultations with the public on the Strategy of Cupertino with Belarus should be known by the ecological organisations which is being prepared by the representation of the World Bank. Therefore, the first day was devoted to these problems.

During the second day the official opening of the meeting took place. The first deputy Minister of Natural resources and Environment Protection I.V. Voitov spoke out with a report about participation of Belarus in international processes and fulfilment by Belarus of its international obligations. The opinion of the non-governmental ecological organisation was also provided in connection with this topic. After the lunch the following discussion took place: “Do we (the Green Movement) influence the process of taking decisions and how can we improve the situation?” On the basis of the introduced proposals the working groups were formed which worked during the third day of the meeting. The fair of the designs of organisations was the final part of the second day. This was a good opportunity for the participants of the meeting to get acquainted with each other and learn about on the activity of their colleagues in other regions.

The third day was the work in-groups and, certainly, provision of the results and acceptance of the documents of the meeting. Description of

operations of groups and documents proposed for acceptance at the meeting is presented in this publication.

We also collected impressions of the participants about the meeting, which would to show the atmosphere of the meeting. Positive and negative sides of the meeting were reflected, and we hope that this will be a good material for preparation of the following national meeting, which is planned within the “Miliokontakt Ost Europe” program.

### The Organisational Committee of the meeting

We suggest that you should get acquainted with the “Ecological Principles” adopted by the participants of the Strategic meeting of the ecological non-governmental organisations unanimously for the further work. For the first time these principles were proposed to the World Forum “For Survival and Development of the Human Being” (Moscow, January 11-14, 1990) with participation of higher religious and political leaders and public of various states. The Ecological Principles were adopted at various ecological conferences during 11 years (one of the latest conferences “Development of the Civil Society” was held in Minsk in 1999).

#### The Ecological Principles

**The creator and the creation  
are undividable!**

**The principle of the personal saving  
is substituted with the principle of  
impossibility of the personal saving  
without saving the surrounding  
Nature and the Human Being in it!**

**Help the Nature with the clear:  
Thought, Word, Act.**

**Love it as your own mother,  
assist to saving:**

**Air, Water, Earth**

**Find your place in the Nature and  
wake the live fire inside yourself of:**

**Consciousness**

**Mind**

**Love to Nature!!!**



## Impressions on meeting of greens of Belarus on June 15-17

In my opinion, the achievement can be considered only the fact that the meeting took place within the planned period and in the planned place. Its participants obtained an opportunity for the other participants to get acquainted with the directions and the results of their work. The majority of “familiar figures” of the ecological movement of Belarus were present at the meeting and this gave it the proper importance. The meeting was also rather democratic – everybody who wished could speak out and provide his/her outlooks.

What, in my opinion, interfered with a more effective operation is non-availability of the distinct agenda which could be agreed with the account of the opinion of the participants at the preparation stage. Then there would be no such a white-hot atmosphere as during the 3<sup>rd</sup> day. The meeting defined the features of the split in the ecological movement in determining the main priorities of the activity. Truly, it’s important to decide what should

we concentrate our efforts at, in the first turn – at protection of Belarusian forests, small rivers or at problems of disposal of wastes, the alternative power engineering or ecological education. But maybe, at all together, and at the same time – depending on inclinations and capabilities of specific ecological groups.

We all should think over the principles of the green ethics in relations to each other. We must never allow the aggressive opposition. Without understanding each other (or rather not willing to understand) we will not be able to demonstrate the high morality, which should lie in the base of resolution of ecological problems.

Source:

*Vladimir Gordeiko,  
Ecoline, Brest*

## From discussions to actions

*“While today the Green Movement has achieved something, our strategy embraces today only the organisationally embryonic state of the ecological self-consciousness and ecological self-defence of the society”.*

Vassil Yakovenko  
“The Strategy of Greens.  
Ecologists are looking  
for the saving means for the country”

“Narodnaya Volya”, dated June 27, 2001-12-09

My first thoughts at evaluation and analysis of the strategic meeting of ecological organisations and initiatives (June 16-17, 2001) – we are lacking wisdom, belief, and firmness of purpose.

Wisdom is born due to understanding and profound comprehension of laws of the Nature and capability of sensing and seeing their manifestation

in the surrounding world. When wisdom appears, the belief is born because the selected way is the only correct and inevitable way.

The firmness of purpose is a feeling of the effort and willingness to act; when the wisdom and belief are available all possible obstacles are not stopped, they are just steps for moving to the outlined goal; then all thoughts and actions lead to success.

We are still the children of “the Soviet country” and are looking for enemies and guilty everywhere: the state is not working, the World Bank is hampering, the mass media are bad, there are spies among the ecologists...

We get something only when we really need it and when we know what to do with it.

Suppose that from tomorrow all mass media, state powers, finances are given to us. What will we do,



will we be able jointly, precisely and efficiently?

### Strategic planning of the activity is the basic thing

Every organisation, initiative, or individual personality must do this firstly for itself/himself, then for the whole ecological movement by defining your own place in it. This work could be the special homework for preparation to the third strategic meeting. Then we could work out the joint strategy of activity of ecological organizations and initiatives for changing the ecological situation in Belarus and transition of the republic to the sustainable development.

The national ecological commission, the informational space, association, coalition or alliance – these all are means. This is as a car – we may drive it, we may keep it in the garage but we may also fall down from the bridge in it.

**Kutalovsky Igor**

*Public Ecological Station “Olsa”,  
Regional department BelOES “Chernobyl”,  
Bobruisk.*

Strategic planning of activity – is the well-thought and substantiated approach to taking the decisions and performance of actions. The main steps of the planning are: formulation of the mission, formulation of the problem, selection of strategic goals, determination of supporters, opponents and target groups, determination of tactical tasks, evaluation of resources and capabilities, evaluation of the selected strategy and adjustment of the plan in accordance with the resources and capabilities, distribution of the responsibility for fulfillment of the plan (many pieces of literature have been published for this topic – this is the basis of any activity).

## Energy saving is cheapest and cleanest “source” of energy

What does energy saving mean? This is merely rational use of energy. The experts assert that by the year 2000 on average the power consumption may be reduced with energy saving measures:

- in the household – by 34%
- of small consumers – by 22%
- at the transport – by 24%
- in industry – by 13-33%

Obviously, the technical reconstruction of industrial units and heat lines, introduction of new processes, reduction of the heat demand power, and use of renewable power sources, require enormous expenses.

But the long-term practice of European countries proves that by having reconsidered the habits and behavior in our every day life, energy consumption may be reduced considerably. And this does not mean worsening of the living standards or refusal of comfort.

### Household energy consumption: where is saving possible?

The lion’s share of the households’ energy consumption – 79% - is intended for heating of the houses; 15% of energy is consumed for other heating processes (water heating, cooking, etc.); 5% of the energy is consumed by the household electric equipment and 1% is spent for lighting, radio and TV equipment.

### What is 1 kWh of energy?

You will need **1 kWh** of power for:

- **50 hours** of listening to the radio;
- **110 hours** of shaving with the electric razor;
- **17 hours** of illuminating with a 60 W bulb;
- **12 hours** of watching TV;
- **2 hours** of vacuum cleaning;
- **5 minute** of having a shower;
- Heating a full bathtub of water by **6 degrees** (150 l).



## Heating

What is the way of reducing the cost of heating without the danger of being frozen?

We cannot influence the weather, rain, snow, and cold temperatures. But anyway, we have a possibility of reducing the cost of heating. Change of habits, conscious attitude to energy consumption, improvement of insulation and reconstruction of the heating system, temperature regulation will together it possible to save about 50% of the energy r needed for heating of houses.

### A) Air temperature

From the point of view of the medical science the temperature in the premises of 18-20oC is most favorable for health. Reduction of temperature by 1oC will make it possible to save 5% of the heating power. Therefore try to avoid overheating of the rooms.

At the temperature of 20oC the energy consumption for heating is 20% lower than at 24oC.

### B) Temperature of walls, doors, windows, internal surfaces

The colder the walls, windows, doors, the warmer air should be in the rooms not to give an uncomfortable feeling.

If the internal wall temperature is 13oC then even at an air temperature of 22°C it feels cold and people will complain about draughts. And how are the temperatures of poorly insulated wall of old residential houses in our Siberian frost?

You can improve the internal insulation of external walls of your apartments with many materials (foam plastic slabs, wooden panels, aluminum foil, gypsum cardboard, felt, thick textile coatings).

#### Advantages:

- this is the most available and cheap method of insulating the rooms;
- this work may be conducted in stages (at the beginning – niches behind the radiators, then cold corners, then the ceiling);
- the internal insulation is not influenced by the weather;
- the internally insulated rooms are rapidly heated.



But, the internal insulation can make the wall behind more humid, and can course rotting in the wall, if the surface and edges of the insulation are not airtight. So, use it with caution and preferably with professional advice.

### C) Air flows – draughts

Draughts lead to a state when the room is quickly cooled and more energy is required to heat it. More cold air penetrates through holes in the doors and windows than is required. At the same time the warm air is quickly lost. Therefore, doors and windows must be well sealed.

### D) Demand in fresh air

It is better to ventilate more frequently and to open windows for a short time than to have a constant draught. By opening windows for a long period heat energy is lost and there is substantial cooling of walls and ceilings.

### E) Air humidity

The people present in the room feel comfortable if the value of the relative humidity is within the interval 65% -35%. Too dry air not only causes thirst



## practical advice

but also increased costs of heating, as the dryness requires higher temperature for reaching the feeling of comfort.

You should remember that cold air (at the same relative humidity) is dryer than the warm air (in absolute humidity). Therefore, frequent ventilation at low outdoor temperatures lowers air humidity indoors.

By frequent ventilation the outdoors is heated and it is a waste of money. It does not reduce “dryness” of indoor air. By suspending an evaporator with water onto the radiator, you feel comfortable even at lower temperatures.

### F) Clothing

The warm convenient clothing in the room is the ideal source of heat. In the simplified form one may count: one lightweight wool jacket can give saving of 25% of energy for heating.

## Energy saving in hot water consumption

Do you know those 2000 litres of water per year flow off the tap if water is dripping (10 drops per minute)?

And if each of four members of family leaves the hot water tap open for only 5 minutes per day, the family loses 7kWh of energy at a cost of 1000 rubles.

Taking a shower is much cheaper than taking a bath in a bathtub.

By taking a bath in a bathtub (140-180 l) you are spending 3 times more energy than by taking a 5-minute shower.

Aerators on the taps make it possible to use water in a more efficient way.

# In what way you can help nature?

## By the ecological organization “For the Earth!” in the framework of the Earth Day (April 22) and Park March-2001

### SHOPS AND WASTES

Don't throw out the already read magazines and books – give them to those who want them or to a library. You can also share your subscription for magazines with somebody else.

- Toys, clothes and other things, which have become unnecessary for your family can be good for somebody. Please, find these people.

- Buy drinks in glasses rather than aluminum cans or plastic bottles. The empty glasses can be returned to the shop. Use the empty plastic bottles and other containers for planting flowers, storing dishes and other goods.

- When you go shopping, please, take a bag or basket, then you won't have to buy a plastic sack and then throw it away. Avoid purchasing the plastic sacks when you buy only one subject and, if possible; don't buy the plastics sack packed products.

- Avoid buying throwaway products such as lighters, razors, etc. Buy those with multiple application: rechargeable batteries, razors of multiple application, etc.

### WATER

- Repair the leaking taps and pipes. On average, they can become the reason of loss of more than 18200 litres of water per month.

- During cooking, about 45-60 litres of water can be saved by washing the vegetables and fruits in a big pot with water instead of washing them under running drinking water.

- About 60 litres of water can be saved during washing of dishes if the dishes are washed in a basin filled with water rather than using running water.

- Take a short shower instead of a bath. This makes it possible to save more than 25 litres of water, which



is approximately 3 times less than when you take a bath.

- Close the water when you are brushing your teeth, shaving or soaping. By filling the basin with water at shaving you will use about of 4.5 liters instead of 45 liters which you would waste by running the water from the open tap. By closing the tap during teeth brushing you will save 18 liters of water.
- When you are buying a new washing machine, buy the model which has an economic mode of using water. New models are more efficient than older ones. They consume about 40% less water.
- Water lawns and gardens in the morning or in the evening when evaporation is lower than during the day.
- Collect the rainwater for watering your garden.
- Don't pass by an open tap.

## FORESTS

- Reduce the consumption of all paper products and use them again. The different type of papers, and cardboard boxes, can be used again. Buy the recycled products (labeled with "recycled" mark). If possible, use only recycled paper at home and in the office.
- Save paper. Make a habit for you to use paper at both sides.
- Plant trees in your yard. Make sure that the tree you are planting is natural for your area.
- Replace the trees, which were cut out. If you are using trees for firewood make sure to replace them with new saplings.
- Write a letter just right now. Write a letter to the authorities by expressing your attitude to the forests of the country. Write letters to local newspapers in order to attract attention to this problem. Ask them whether they are using the recycled paper and whether they recycle the unsold newspapers.
- Use efficient ovens. If you are using firewood for cooking and/or heating of your house make sure the oven, which you are using is efficient and does not burn the firewood in a bigger quantity than it is necessary.

• Spread "the word". Share all these ideas and care of the forest with your neighbors and friends. Attract your friends, family, neighbors, and colleagues to actions for protection of forest resources. Your contribution will be more visible. (This item refers to any ecological problems).

• Help us to spread these recommendations for others – make a newspaper in your school/university which will be dedicated to forests and examples of their saving.

## HOW TO PREVENT FORESTS FROM FIRES

- Never throw burning matches and cigarettes in the forest.
- Don't make campfires and don't burn garbage during the fire-hazardous period.
- At hunting don't use wads made of smoldering materials.
- Be careful and make the campfire only on a site with bared soil cleaned from vegetation.
- By leaving the fireplace, close the fire with water or soil until it fully stops burning.
- Don't leave the glass containers and broken glasses abandoned. By collecting the sunrays they can become the source of a fire.

## MISCELLANEOUS

- Form ecological groups in your school or in your local district. Organize meetings on ecological issues at your school. An expert, scientist, or an eco-organization representative could be invited to these meetings as lecturer.
- Try to explain the whole range of ecological problems to the neighboring local people.
- Don't burn garbage and leaves – this results in discharge of poisonous gases and ash to the atmosphere.
- Make actions to clean lakes, rivers, channels and other ponds in your area. Cleaning the garbage may also be done in your local district like in parks, at squares, or in your own street.
- Join the work of ecological organizations, for example, as our one.



## contacts

- Plant trees, bushes and flowers. Arrange your own garden!
  - Perform campaigns against the cruel treatment of animals or hunting.
  - Write letters to the local authorities, companies or firms, which, in your opinion, are harmful for the environment. You can even get the signatures of your neighbors and friends who are also concerned of this.
  - Use bicycles and public transport instead of personal cars.
  - Make your parents and/or buy the electric appliances requiring less electricity.
- Don't forget telling your friends and relatives that they also can do many useful things in order to help the Nature.

## Publications

### “Sustainable development”: scholastic outlook

This collection of reference materials and publications of domestic and foreign authors for the problems of the sustainable development of settlements reflects the outlook of governmental and non-governmental organisations, scientists, experts, and the public. The collection was issued in 2000, edited by: the President of the Belarusian Department of the International Academy of Ecology – the Head of the Habitat Center of the National Commission of Settlements Development of Belarus – Evgeny I. Shirokov; the Deputy Minister of Architecture and Construction of the Republic of Belarus – A.I. Nichkasov; the Rector of the Academy of Management under the President of the Republic of Belarus - A.G. Lucashenko. The collection includes the conceptual materials for the sustainable development which most fully reflect the outlook of representatives of both the official circles and activists of non-governmental organizations involved into the joint work of implementation of “Agenda 21” of the UN. The publication reflects the ongoing general process of transition to the sustainable development in the field of architecture/ urban construction and ecological design.

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### Legal bases

#### of establishment and activity of public associations in the Republic of Belarus

The brochure was published for the first time in 2001, edited by Elena Laevskaya from the public association “Ecopravo”. This publication was prepared in the framework of the joint project of the public organization Milieukontakt Oost-Europa, Amsterdam, the Netherlands, and the International public association “Ecological Initiative “BURENKO”, Minsk, Belarus, “Strengthening of positions of public ecological organizations of Belarus”. The project is implemented with the financial support of the Program of the Social transformation of countries of the Central and Eastern Europe (MATRA) of the Ministry of Foreign Affairs of the Netherlands.

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