

## V. REPORT OF THE WORKSHOP

The Workshop on the project “Regional Pilot Project to Develop Monitoring and Reporting Capacity for Multiple Greenhouse Gases in Russia” was held on 14 - 15 December, 1999 at the «Intourist» Hotel in Veliky Novgorod City, Russia. The Workshop was organized by the group of experts from different Russian ministries and institutes, which carried out this project, (leader of the Project - A. Kokorin) and Novgorod State Committee on Environment Protection (Chairman of the Committee - V. Savin). The US EPA and PNNL sponsored the project and the conducting of the Workshop. Their representatives took an active part in the Workshop (US EPA - W.Irving, R.Harvey, J.Schreifels, G.Waxmonsky; PNNL -M.Evans and I.Popov).

There are 51 participants in the list, cited below. In fact there were approximately 65 people, including participants from Novgorod, who attended only some sessions of the Workshop. There were 11 experts from Moscow, 9 representatives from 4 NIS countries, 12 participants from foreign and international organizations, including World Bank and OECD, more than 15 participants from Novgorod and 8 representatives from other regions of Russia. According to the initial Work Plan of the project, only 20-30 persons were supposed to take part at the Workshop, but after detailed consideration of the question it was decided, that the number of participants can run up to 60 persons. It became possible because PNNL additionally supported 9 participants from NIS countries. An another reason was a reduction of prices in US dollars equivalent in Russia, especially in Novgorod (after the crisis in August, 1998). Carrying out the Workshop in Moscow would be considerably expensive.

The Agenda of the Workshop is cited below. The main goals of the Workshop were:

- to present the first year results of greenhouse gas inventory capacity building project;
- to train inventory specialists from Russia and NIS countries;
- to discuss the main issues of the upcoming year.

The Workshop was opened by the Chairman of the Regional Committee on Environment Protection V. Savin. The Chairman of the Regional Duma, the member of the Federation Council of the Russian Federation A. Boytsev welcomed the participants and emphasized the significance of the regional approach, stability and progress of the social and economic changes, taking place in the region. He highlighted readiness of the administration and regional legislators to undertake different experimental measures for the purpose of the environment protection. The representatives of the US EPA, PNNL, State Committee of the RF on Environment Protection and Ministry of Fuel and Energy of the RF also welcomed the participants of the Workshop. They expressed positive opinion in the both this project and the conception of GHG emissions inventory.

Then the leader of the project presented the general information about the goals and issues of the project and the process of implementation (materials are presented above in Section I).

## The list of participants

	Name	Organisation	Phone/fax, e-mail
<b><i>Participants from Moscow</i></b>			
1.	Simon Avaliani	Higher School of Economics	Phone: 924-62-40, centre-hse@mtu-net.ru
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3.	Mikhail Gytarsky	Institute of Global Climate and Ecology (Russian Academy of Science)	Phone: 470-3148 Mike.Gytarsky@g23.relcom.ru
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6.	Alexey Kokorin	Russia	Phone: 413-6263/727-0939 Alexey.Kokorin@g23.relcom.ru
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11.	Georgy Safonov	Higher School of Economics	Phone: 924-62-40, centre-hse@mtu-net.ru
<b><i>Participants from NIS and other countries</i></b>			
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***Participants from Novgorod and other regions***

33.	Vladimir Savin	Chairman of the State Committee for Environment Protection of Novgorod region	
34.	Anatoliy Boytsev	Chairman of the regional Duma	
35.	Vitaliy Milyaev	Director of the Scientific Research Institute "Atmosphere"	
36.	Sergey Chicherin	Deputy Director of the Voyenkov Main Geophysical Observatory	

37.	Mikhail Fetshenko	Chairman of the State Committee for Environment Protection of Karelia Republic	
38.	Leonid Sirotkin	Chairman of the State Committee for Environment Protection of Nizhny Novgorod region	
39.	Vasiliy Ivanov	Chairman of the State Committee for Environment Protection of Pskov region	
40.	Alexander Razumov	Joint-stock company "Akron", Industrial Safety Department	
41.	Anatoly Kashirsky	Novgorodskaya Power Station	
42.	Tatyana Pankina	Engineer- Ecologist of Novgorodskaya Power Station	
43.	Eduard Avakyan	Chief engineer of the Nevskaya Station of Underground Gas Storage	
44.	Valentina Zadonskaya	Head of the laboratory analysis and monitoring inspection of the State Committee for Environment Protection of Novgorod region	
45.	Alexander Semenov	Head of the Atmospheric Air Protection Department of the State Committee for Environment Protection of Novgorod region	
46.	Natalya Lastovskaya	Head of the Hydrometeorology and Environment Monitoring Centre of Novgorod region	
47.	Vladimir Serov	Deputy Chairman of the State Committee for Environment Protection of Novgorod region	
48.	Natalya Fedorova	Deputy Chairman of the State Committee for Environment Protection of Novgorod region	
49.	Yuriy Fedorov	Chief Expert of the water resources protection and biodiversity Department of the State Committee for Environment Protection of Novgorod region	
50.	Janna Lodjun	Leading Expert of the Complex analysis Department of the State Committee for Environment Protection of Novgorod region	
51.	Oleg Tailakov	Russian Coalbed Methane Centre	Phone: 3842- 281366 Fax: 384-2-35-7297 Tailakov@mail.stanet.ru

**Workshop for the Regional Pilot Project to Develop Monitoring and Reporting Capacity  
for Multiple Greenhouse Gases in Russia»**

**December 14-15, 1999**

*Intourist Hotel, Veliky Novgorod, Russia*

**AGENDA<sup>1</sup>**

**December, 14**

**9:30 – 10:00 Registration**

**10:00 – 11:15 OPENING SESSION (Chairman Vladimir SAVIN)**

Welcome: 10:00 – 11:15

- Region Committee on Environment Protection, Vladimir SAVIN
- Administration of the Novgorod region, Anatoly BOITSEV
- Representatives of US Environmental Protection Agency (US EPA), William IRVING
- State Committee on Environment Protection (Moscow) Vladimir BERDIN
- Pacific North-West Laboratories (US PNNL), Ilya POPOV
- Russian Ministry of Fuel and Energy, Oleg PLOUGNIKOV

General information on the project implementation (10 min + questions), Alexey KOKORIN

Presentation of Agenda of the Workshop (discussion and correction of Agenda to extent possible, if necessary), (10 min), Alexey KOKORIN

*11:15 Coffee break*

**11:30 – 13:00 SESSION 1 (Chairman William IRVING) Presentation of «The Guidelines on GHG emissions inventory at the regional level in Russia».**

- General structure of the Guidelines (10 min + questions), Alexey KOKORIN
- Section: Energy, (15 min + questions),  
Yuri SAFONOV, Oleg TAILAKOV and Alexander NAKHUTIN
- Section: Industry, (10 min + questions), Alexander NAKHUTIN
- Section: Agriculture, (10 min + questions), Michael GYTARSKY
- Section: Waste, (10 min + questions), Alexander NAKHUTIN

*13:00 Lunch break*

**14:30 – 16:00 SESSION 2 (Chairman Alexey KOKORIN, reporter Michael GYTARSKY)  
Discussion on «The Guidelines on GHG emissions inventory at the regional level in Russia» and  
future development of this direction of work.**

- Inventory experiences in USA, (10 min + questions), William IRVING
- Official status of the Guidelines and it's future development, (10 min + questions), Vladimir BERDIN
- IPCC Inventory Program and the Work on Good Practice, (15 min + questions), William IRVING

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<sup>1</sup> This is really implemented Agenda, it has non-significant differences from the initial version.

- New UNFCCC inventory reporting format and problems of EIT countries, (10 min + questions), Alexey KOKORIN
- Recommendations on improvements and corrections, future development of the Guidelines, (20 min + general discussion), Irina ESERKEPOVA, Yuri FEDOROV, Irina TROFIMOVA, Lilia ZAVYALOVA.

*16:00 Coffee break*

**16:20 – 18:00 SESSION 3. Presentation of inventory results in Novgorod region and case studies (Chairman Vladimir BERDIN, reporter Oleg PLOUGNIKOV).**

- Data on emissions in Novgorod region, (30 min + questions), Alexey KOKORIN, Alexander NAKHUTIN, Yuri SAFONOV, Janna LODJUN, Michael GYTARSKY, Yuri FEDOROV.
- Coal methane, (20 min + questions), Oleg TAILAKOV
- Case Study on Forestry and Land Use Change (20 min + questions), Michael GYTARSKY.

*19:00 Dinner*

**December, 15**

**9:30 – 10:30 SESSION 3. Presentation of inventory results in Novgorod region and case studies (chairman Vladimir BERDIN, reporter Oleg PLOUGNIKOV).**

- Sulfur Hexafluoride in electric energy (20 min + questions), Valentina MIKUSHEVICH, Alexander NAKHUTIN
- Discussion of inventory problems on enterprise level: background information on Region - 10 min, Yuri SAFONOV, situation in USA and NIS, general discussion
- Discussion of inventory problems at the regional level, inventory «gaps» and possibilities of its fulfillment; similar experiences in USA (possibilities of measuring of N<sub>2</sub>O and other GHG); recommendations on the inventory revision and improvements (general discussion)

*10:30 Coffee break*

**10:45 – 12:00 SESSION 4. Economic mechanisms of emission reduction (chairman Reid HARVEY, reporter Alexander GOLUB).**

- Experience of SO<sub>2</sub> trading in the USA, (20 min + questions), Jeremy SCHREIFELS
- Risk analysis in Novgorod Region and co-benefits of GHG emission reduction, (20 min + questions), Simon AVALIANI.
- Experience in JI Projects (15 min + questions), Meredydd EVANS

*12:00 – 13:00 Lunch break*

*13:00 – 14:30 A tour of the city and Novgorod Kremlin (bus); light day is rather short, it's the only suitable time for the tour carrying out; the excursion will be conducted in Russian and in English)*

There were two parallel sessions after the tour; the most part of the participants attended the Session 4a, and technical experts considered IPCC software in Russian at the Session 4b (computer was available)

**14:40 – 16:10 SESSION 4a. Opportunities for participation in international cooperation - JI projects and «trial» emission trading, (chairman Annie PETSONK, reporter Alexander GOLUB)**

- Brief review and perspectives of the UN FCCC process (20 + questions),  
Stephane WILLEMS,  
Garry WAXMONSKY,  
Vladimir BERDIN,
- Minimum elements for initiation of emission trading in Russia, (20 min + questions), Alexander GOLUB, Annie PETSONK.
- Discussion on opportunities for Russian and NIS enterprises and organizations (representatives of regional enterprises, representatives of other regions and NIS, Garry WAXMONSKY, Reid HARVEY, Alexander GOLUB, Oleg PLOUGNIKOV, general discussion)

**14:40 - 16:10 SESSION 4b. IPCC software in Russian (Michael GYTARSKY and Yuri SAFONOV)**

- Software description
- Fulfilling of worksheets
- Summary tables

*16:10 – 16:30 Coffee break*

**16:30 – 18:00 CONCLUDING SESSION. (chairman Vladimir SAVIN).**

Communications of reporters and project coordinators (focus on future works of 2000 and subsequent years)

- The main points of the Guidelines revision and further methodical developments, (15 min + questions and discussion), Michael GYTARSKY
- Outlook of inventory results, possible improvements and works of 2000 (15 min + questions and discussion), Oleg PLOUGNIKOV, Alexey KOKORIN and Meredydd EVANS,
- Outlook of Joint Implementation and Emission Trading development (20 min + questions and discussion), Alexander GOLUB

Concluding remarks

- Region Committee on Environment Protection, Vladimir SAVIN
- US Environmental Protection Agency (USEPA), William IRVING
- Pacific North-West Laboratories (US PNNL), Meredydd EVANS
- State Committee on Environment Protection (Moscow), Vladimir BERDIN

“The Guidelines on GHG emissions inventory at the regional level in Russia” was submitted at the First Session of the Workshop. All the participants of the Workshop had a copy of the Guidelines (270 pages), that allowed to reduce the time of the Guidelines presentation. The present Report contains the description of the Guidelines in the corresponding Section.

The Workshop Report cited below contains the main points of reports and discussions which

were represented by Reporters of the following Sessions: Session 2 - Gitarsky M.L. (Discussion of “The Guidelines on GHG emissions inventory at the regional level in Russia”); Session 3 - Plougnikov O.B. (Results of inventory in Novgorod region); Session 4 - Golub A.A. (Economic instruments of emissions reduction, opportunities for participation in the international cooperation).

**The First Rapporteur** (M. Gytarsky, Institute of Global Climate and Ecology under Roshydromet and Russian Academy of Science) summarized the discussion on Guidelines for Regional Greenhouse Gas Emission Inventory (further *Guidelines*) and the opportunities for future development of these activities (Session 2). It was an interesting and productive session. Participants of the workshop listened for presentations on the experience of greenhouse gas inventory in USA and the IPCC Good Practice in Inventory Preparation Program which were submitted by William Irving, US EPA. The IPCC Good Practice Program can be considered the proceeding of inventory development process on the international level. Vladimir Berdin, State Committee for Environmental Conservation of Russia, spoke about official status of Guidelines and the prospects of further activity on greenhouse gas emission assessments. Alexey Kokorin, Project Leader, informed the participants of the workshop on the latest decisions of UN FCCC Secretariat on national inventory preparation. In particular, Alexey Kokorin spoke about new reporting format proposed by the Secretariat and considered possible difficulties relevant to its application by the Parties of Convention. I. Eserkepova, Kazakhstan, Yu. Fedorov, Novgorod Regional Committee for Environmental Conservation, I. Trofimova, Ministry of Environment of Ukraine, L. Zavyalova, Ministry of Economy of Uzbekistan, V. Milyaev, *Atmosfera* Scientific and Research Institute, S. Chicherin, *Voyeykov* Main Geophysical Observatory, I. Gritsevich, Center for Energy Efficiency, V. Mikushevich, RAO *Energy*, and others asked questions and actively participated in discussions.

Summing up the results of the Session 2 it must be noticed that all participants gave high estimates to the project results. They emphasized that the *Guidelines* and presentations made at the workshop formed good background for discussions. The Guidelines developed preconditions for “top - bottom” and “bottom - top” inventory preparation in various sectors and for individual enterprises. It was important for development of national monitoring and reporting system. The discussion on *Guidelines* at the workshop enabled revealing advantages and lacks of the work performed so far. The participants made valuable remarks and proposals. In particular, they pointed at uncertainty of legislation base for greenhouse gas inventory and its financial and other support. Is not clear how verification, certification, and audit of inventories should be made, and who will take the responsibility for them. In connection with above said the reports on USA experience on national greenhouse gas inventories, and the IPCC Good Practice Program were of a special interest among the workshop participants.

Many of participants who participated in discussion think that it is necessary to integrate and harmonize the greenhouse gas inventory activities with other national and international monitoring systems, conventions, and agreements. The scientific research on availability, determination, quality assessment, and application prospects of country-specific and sectoral values of emission factors as well as activity data should be proceeded.

The practical proposals included development of scheme for regional activity data collection on the annual base together with a circuit for decision making process. It is also expedient to

develop proposals for additional statistical data necessary of inventory preparation and harmonize the results to avoid double counting.

Speaking about the prospects for future the participants discussed possibility of proceeding similar work in another pilot region to obtain a more complete scope of sources and sinks of greenhouse gases. Besides, it was found possible to continue inventory in Novgorod region, because some of greenhouse gas emission sources have gained insufficient attention. Particularly these are peat bogs and deposits. Besides, it is known that a new version of the Revised IPCC Guidelines for National Greenhouse Gas Inventories for land use change and forestry is under development now. Evidently it will promote for detailed account of greenhouse gas emissions and sinks in the appropriate sectors. The problem of carbon dioxide emission and sink from agricultural lands needs further investigations. Meanwhile, on the other side the broadened regional inventories enable testing the system under somewhat different conditions. Besides these could be first steps for development a national greenhouse gas emission and sinks monitoring system.

The report on the new UN FCCC inventory reporting format presented by Kokorin A.O. was the final one of the Session 2. A.O.Kokorin participated in the special workshop for EIT countries in November. The problems of adaptation of the new reporting format in these countries were discussed there. It was underlined, that the new reporting format should not be considered as a new format for calculations. That format does not require fundamentally new information, but requires a standard presentation of a *national* report, including information on methods used, emission coefficients and description of a way the coefficients were received. Table forms are being used for presentation of the same information as IPCC requires to present as a text. So, all text explanations can be found inside the tables. Some additional reporting data are required: the extent of inventory completeness; data on “re-counting” of bygone years (especially 1990); summary tables of changes in the space of 1990-1998. All described above was considered by the workshop participants as appropriate at the *national* level, but not at the regional one. Regions might represent the same information in IPCC software format. Then the national group on the inventory should full out UNFCCC forms. In general, the new UNFCCC inventory reporting format was considered not to be a serious barrier in comparison with deep institutional, financial and technical problems of inventory in Russia. It was concluded that implementation of the new format would not induce any additional difficulties if the institutional and financial problems are solved.

**The Second Rapporteur** (O.B. Plougnikov, Ministry of Fuel and energy of the RF) contained the discussion of Novgorod Region inventory data and presentations of four case studies.

First of all, it was indicated that the inventory scheme was implemented successfully at the regional level. That scheme included interaction of supervisory authorities, local administration, enterprises as well as interaction of Regional Committee for Environment Protection with other regional authorities.

Further the Reporter named briefly the main sections of the inventory and the main emissions parameters (see above: emissions Inventory Section, Summary data). The decrease in the total volume of emissions in Novgorod region was about 20% in 1990-1998 (that index comprised about 30% at the national level). Currently the GHG emission in the Novgorod oblast is about 7.5 Gg CO<sub>2</sub>-eq.(1998) or a little bit more than 0.3% of the total Russian emission, while the population is about 0.55%. It means that emission per capita is significantly less than Russian

average value. Novgorod's emission per capita is about 9.5 t CO<sub>2</sub>-eq. per year (1998), while Russian average is about 16 t CO<sub>2</sub>-eq. This Novgorod's value is less than in many developed countries of the Northern zone, in particular it 10-20% less than in United Kingdom or Finland. On the other hand GDP per capita is significantly more in these countries. However, in any way, the oblast can be characterized by quite developed gas system and in general careful approach to heat.

The main reduction of emissions took place in 1990-1994, mainly due to CO<sub>2</sub> emissions decrease. The CO<sub>2</sub> emission was 60% of the total volume of emissions, methane and N<sub>2</sub>O – 20-25 % each. Fuel combustion with energy purposes causes 98.5% of CO<sub>2</sub> emissions.

Relatively large level of N<sub>2</sub>O emission is caused by nitric acid production at the AKRON chemical plant. This plant currently emits up to 93% of all N<sub>2</sub>O emission, in 1990 it's contribution was 80%. At present time agriculture production (including nitric fertilization) is decreased sharply and it's contribution into total N<sub>2</sub>O emission became 4 times less (from 20 to 5%). In general N<sub>2</sub>O emission in 1998 is slightly more than in 1995, but a quarter less than in the base year 1990.

Methane emission is almost constant. However there was very significant redistribution of emissions among source categories. In 1990 waste contributed 45%, agriculture 35% and energy about 20% of all methane emission. In 1998 there are more modern system of waste utilization, which significantly improve ecological situation (first of all, in the capital of the region), however methane emission from waste became larger. Simultaneously number of cattle drop down sharply. Maintenance for gas pumps became better. In the result in 1998 contribution of waste became more – 75%, while energy – 10% and agriculture only 15% of all methane emission.

Emissions of so-called new gases were estimated as 150 kg (mainly this is HFC-134a in refrigerating equipment) or 0.2 thousand t CO<sub>2</sub>-equivalent. However, the tendency of fast growth in this emission was pointed out. Implementation of JI projects connected with new gas emission reduction are considered to be promising.

Since a number of emissions sources in the region could not be presented, two case studies on two concrete sources (coal methane and SF<sub>6</sub> in electric equipment) were carried out.

The representative of the Methane Center in Kemerovo (Western Siberia) O.V. Tailakov prepared the special report. He considered practically all coal basins in Russia and estimated coal bed methane emissions. Along with these estimations, the participants of the Workshop got interested in the institutional scheme of data collection through Gosgorteknadzor authorities (state organization which controls coal mining safety). It means that a centralized data collection (for example, such as in Russian joint-stock company RAO "EES Rossii") can be used for several of sources instead of regional approach. The opinions concerning a use of a centralized approach in metallurgy and gas transportation were expressed as well.

As a result of the case study on SF<sub>6</sub> the detailed analysis of technical characteristics of high-voltage equipment which contains insulating gas (SF<sub>6</sub>) was carried out. Data on production and assembling of such kind of equipment were analyzed as well. During the discussion it was underlined that the approach of the case study as well as level of details are very good. US EPA representative highlighted that the results of the work could be useful not only for Russia, but for USA as well.

One more case study was dealing with forests (see the corresponding section of the report). Unfortunately, there are neither exact definition of Kyoto forests nor satisfactory methodology

for sink estimation. The author of the study - M. Gytarsky acquainted the participants of the Workshop with the current state of methodology and international workings out in that field. Then the approximate calculations of CO<sub>2</sub> sinks in forests fulfilled in according to the old IPCC methodology were presented. These calculations can be considered as just indicative and aimed at description of the general situation. The first conclusion is that forests are CO<sub>2</sub> sinks. It means that, emission caused by forest cutting, forest fires and decomposition are less than sink caused by forest growth. In general it can be explained by the high percentage of relatively young forests. The net-sink is 1500-3000 Gg CO<sub>2</sub> in 1990-1998. It was underlined that the question is very complicate. Direct involving of the Federal Forestry Service into the process of was considered as (in particular for preparation of all-Russian methodology and normative documents).

The last case study was devoted to largest enterprises of the Novgorod region - potential participants of JI projects and emissions trading. The report made by G. Safonov attracted a great attention, especially among representatives of some enterprises (they really became co-authors of the presentation), first of all, AKRON and Power Plant #20. Each of 6 enterprises have clear emission reduction proposals. They are on line with their general strategy of development but can not be implemented because of the shortage in funds or lack of additional incentives (such as ERU selling).

The opportunities to find means for JI project implementation and emission trading were discussed. It was pointed out that information on chosen enterprises is not bad at all. However, a specification on emission data (for instance, use of specific emission factors at AKRON) has to be made. An additional data certification is advisable. The certification could also be implemented by energo-auditing companies and Gosenergonadzor authorities.

In conclusion O. Plougnikov underlined that it was very important to continue inventory efforts in the Novgorod region and to conduct inventory of GHG emission in 1999. Probably it would not require large expenses. These expenses could be included in the budget of all regional inventory works of 2000.

#### **Summary report on Session 4b (work with software)**

The participants of session 4b considered IPCC software especially designed for filling national greenhouse gas inventory reporting tables. The specialists from Novgorod region, Ukraine, Kazakhstan and Uzbekistan took part in work of this session.

Within the framework of the project, the IPCC software was partly translated into Russian and a short-term training course was provided for interested persons. During the work of session some technical issues relevant to the use of software were discussed. The participants had a common opinion that there are some problems which restrain application of the software. The most important of them are as follows:

- Complexity of use the IPCC software in Windows and other environment that are adapted to national standards (language, style, and etc).
- Some tables have small size of fields so that the figures cannot be properly inserted there.
- There is a lack of transition between various years of inventory. To reach another inventory year the user has to close the program, then start it again and reach the year. That creates inconveniences for the users.

The specialists reported about their own software for inventory activities that they considered more suitable. According to the opinion of session participants, the elimination of the above shortcomings significantly facilitates application of the IPCC software.

**Report of the Third Rapporteur** (A. Golub, Harvard University) summarized the main part of the second day of the Workshop (Sessions 4 and 4a). Issues on economic mechanisms of GHG emission reduction were discussed during these sessions. First of all, the Speaker resumed the previous results of the Workshop:

«It has been demonstrated, that a good inventory of the GHG emission *can* be done quite fast in a typical Russian region by limited financial resources»

Surely, there will be a lot of unsolved problems, connected mostly with the forestry, swamps, agriculture, and to some extent with waste. However, as it was demonstrated in Mr. Schreifels's presentation, dedicated to experience of SO<sub>2</sub> trading in the USA, it is not necessary to solve all these problems to begin emissions trading in a separate sector of economy. Moreover, the system does not look complex, when only large power stations are under consideration. During the discussion it was confirmed, that the experience of RAO "EES Rossii" has already demonstrated this fact. The emissions inventory has already been implemented. There is maybe some imperfections, but we have an efficient inventory system on large power stations.

On the other hand, one can not simplify the situation. Risk insurance is not enough developed in Russia. Whereas it has a great importance, especially in Russia. In the next presentation, made by S.Avaliani «Risk analysis in Novgorod Region and co-benefits of GHG emission reduction» a detailed review of different risks was presented. We considered the following to be the most valuable for our work: «While it is too early to speak about insurance and minimization of risks for the whole country, it is possible to outline a range of risk and to get corresponding guarantees of the supposed options and forward transactions in a region». It means, that projects can be implemented already now, if under favorable conditions. This point was confirmed by the next presentation of Ms. Evans as well. She told about the successful experience of the Joint Implementation projects of the USA. As it was noted in the discussion, Russia has neither a high percent of successful JI projects (among 8 projects, which have the status of AIJ projects, only 4 are carrying out successfully), nor proper system of project consideration. The system should become transparent and efficient.

As a whole this deal is only a small part of a large issue «How we can create a system for the Kyoto Protocol and FCCC implementation in Russia?». A.Golub emphasized, that the issue should be considered just so. However, the discussion showed, that the answer is not so complicated. Much has been already done in Russia in that field. Atmospheric pollution control system *is functioning* substantively and quite efficiently. Orders of the supervisory organizations are practically always implemented. The participants of the Workshop paid attention to the fact that if the Kyoto Protocol would enclose only such gases as SO<sub>2</sub>, CO, NMVOC (these gases of indirect greenhouse effect are included in the Convention, but not in the Protocol), there would be no difficulties for Russia. All the emissions have been already taken into account, emission quotas and the fines are well known, and so on. So it would be necessary only to implement the current system in market economy.

State Committee of the RF on environment Protection is a vitality organization. It has a leading research Institute «Atmosphere» (Sankt-Petersburg, director of the Institute V. Milyaev took an active part in the discussion), which will be able to carry out the scientific researches on estimations of the specific emissions factors and so on. Certainly there are a lot of technical problems. For example, the equipment for measurement of some gases, including N<sub>2</sub>O has to be repaired and calibrating mixtures are required.

A.Golub emphasized, that the main task is to apply the current pollution control system to emissions trading and Joint Implementation projects. On the other hand, as was emphasized by some participants (V. Milyaev, I. Gritsevich, S. Chicherin and others), we have a number of inter-agency problems and these problems can not be solved next year all over the Russia.

Experience accumulation at a regional level can be one of efficient ways. We have already had the first positive inventory experience. We have to add some legislative points and make our pollution control system «suitable» for the Kyoto Protocol. «Minimum elements» of trading are necessary for that purpose. They were analyzed in detail by Ms. Petsonk in her presentation «Minimum elements for initiation of GHG emission trading in Russia». After that an active discussion started: Who, How, When, Which mechanism should one start from? Here ought to be highlighted, that experts from NIS countries (Kazakhstan, Turkmenistan, Uzbekistan, Ukraine) took an active part in the discussion as well. That means, that even such countries as Turkmenistan and Uzbekistan are trying to “test” emissions trading in their economic situation. They try to determine their position: Should they follow Kazakhstan?

However the general conclusion was that we would not solve these problems now and it is not absolutely necessary to solve them now. It is necessary to begin demonstrative and pilot projects without restriction in potential measures and mechanisms. The participants of the Workshop emphasized that it could not be determined now how many projects should be and where they should be carried out. If there should be one or several projects in Novgorod region, or in several regions, in which projects should be associated by mutual obligations. Maybe it makes sense to begin not with greenhouse gases but to carry out a pilot domestic or inter-regional SO<sub>2</sub> trading.

One more point was the discussion on approaches to quotas and trading income use. An additional analyze of this issue was considered to be necessary. It is advisable to carry out a particular study on quota allocation in Russia (Government Decree, calculation by formula, prior arrangement system, special commission and etc.) and to analyze possible consequences.

The result of discussion was the general opinion of participants that in some positive transactions a successful start is guaranteed.

Workshop gathered experts, who have direct concern to the problem. But even they noted, that a training course (about one week) would be advisable. That course should be oriented to the current situation in Russia. That course should be conducted in Moscow (or in Moscow region, not far from Moscow - that reduces expenses). The training, organized by USAID in USA does not solve the problem. Air tickets and accommodation are expensive, so a small amount of participants can take part in the training. In addition, all potential participants have to have a good command of English. Age limit (35 years) does not meet the requirements of Russian conditions, where deputy directors and similar categories of people have to be trained.

## **Final remarks of the Workshop**

In conclusion of the Workshop the main results and recommendations have been summarized.

*There is a positive experience of the emissions inventory in Novgorod region. It is impossible to implement this experience all over the country or even over its main part in the next year. First of all, the experience should be repeated and developed in several unlike regions.*

*There is an essential lack of data in several sectors (forestry, transport, waste). These problems should be solved step-by-step. But these gaps are not connected with the most important emissions sources, i.e. these gaps do not create any barriers for JI projects implementation and pilot transactions on emissions trading in main branches (energy, industry, etc.). As a whole, even taking into account all gaps and drawbacks, the quality of the inventory is quite good. Its accuracy and detail would probably satisfy the Kyoto Protocol inventory criteria (there are no such criteria yet). Any way, it is quite sufficient for filling out the New Reporting Format, which has been proposed by the FCCC Secretariat.*

*There is a methodical material on calculating the emissions, which is a prototype of the Guidelines obligatory for use by regional branches of the State Committee on Environment Protection. Undoubtedly, the Guidelines should be elaborated and heavy work is ahead, in particular, unification with the other documents of State Committee. But we have already had a good basis for the preparation of the final version. It was necessary to create such a basis, because of the IPCC Revised Guidelines are used by a few specialists, who are good at English. That made the IPCC Revised Guidelines practically useless in the regions.*

*Study on specific emission factors and preparation of the relevant guidance is very important work. But it will take more than a year. It is very important to recruit the best Russian experts, in particular from Research Institute «Atmosphere». It is desirable to include these works into R&D plans of the State Committee on Environment Protection.*

*A very important conclusion is that a quite reliable inventory system can be created in the region by quite limited financial resources. It should be based on the current system of atmospheric pollution control.*