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Copenhagen Agreement – A new paradigm for the
climate challenge solution

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S. Agibalov¹ & A. Kokorin²

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Pan-European Institute**

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1 Climate and Economy (after the Copenhagen Summit)

For its organizers and the UNO system the Copenhagen Summit turned out to be a complete flop. Without halting all activities on the climate regulation, it nevertheless reformatted the process on the global scale. Accents shifted from developed states to developing ones; from the carbon market to financial mechanisms and intense use of new tools, as well as private business engagement; from the US in isolation to the US as a leader and key source of pressure on China and India to act vigorously; from the Russia – the savior of the Kyoto Agreement to the Russia standing up by a different global approach based on actions being taken by all countries.

Twenty years ago science had much fewer evidence in support of the anthropogenic impact on the climate, yet environmental activists succeeded with the globally process on greenhouse effect reduction³. Over the same period politicians from many countries, and primarily from the EU, had the chance to re-assess the urgency of the climate change issue and the necessity of the low carbon growth, nevertheless no radical steps were taken to reduce emission to the lowest permissible level.

Some powerful economic players engaged in discussions and decision making process. Parties found more or less their positions in the course of debates: namely, that they not so much belong to “believers or non-believers” of the anthropogenic threat to the Earth’s climate but rather to those who “is ready or not” to embrace significant expenses to prevent potential disaster. Speaking in general terms, the world agrees with the statement that human activity is harmful for the global climate, and those skeptically minded make up the minority.

Issues of the climate change are directly linked with economic issues in the energy sphere, specifically: the bulk of manmade emissions (around 60%); state politics and multinational associations aimed to reduce them would make one of the major factors in decision making in the sphere. Energy strategies of leading states stem out of the necessity to reduce emissions associated with manmade effect on the climate change. And some countries strive to ensure energy security and energy consumption for the purposes of development.

³ In 1989 G7 leaders at the annual summit recognized the need to approve the World Convention on Global Climate Change. And in 1993 UN Framework Convention on Climate Change was signed in Rio de Janeiro (UN FCCC).

2 Do We Know Enough about Climate Change?

Climate science was assaulted by unprecedented attacks in mass media right before the Copenhagen summit. All unseemly facts and controversies among scholars were scrupulously described and became “incidentally” known in the second half of 2009. Is there really a polarization in the scholar community? Are there real dark holes in the sphere and how do they tell on related decision making? Today anyone can make a judgment about *the weather* and not be really aware of the whole complexity of the science of climate.

Survey results, conducted in 2008 among natural science scholars mainly in the US and Canada (90% of respondents hold PhD) appear quite representative⁴. Two questions (1) do you think the climate change is happening, and (2) do you think anthropogenic activity plays a significant role in the rise of the temperature – received positive responses in 90% and 82% cases accordingly.

Besides, specific area of the natural science, as well as on the fact whether scientist's works appear today in scholarly papers was clearly a factor in determining the ratio of positive responses. For all climate scientists, in as much as for all actively involved scientists, the ratio was 88–90%, for professionals in climate change who publish their works 97,4%. These figures stand in stark contrast to the findings of the Gallop Institute: only 58% of the US population actually agrees with the fact that man's activity plays a significant role in current climate processes⁵.

Russia, just like other countries, makes an attempt to quantify the role of man in current climate change. In 2008 Russian scholars published two fundamental volumes. Specialized institutes of *Rosgidromet* and Russian Academy of Science (RAN)⁶ contributed to it. The general standpoint of the authors can be summed as follows: *“It is highly unlikely (<5%) that climate change as observed over the past 50 years has no external influence; we can maintain with a great degree of certainty that the observed increase of the concentration of the anthropogenic greenhouse gases is responsible for the greater part of the global warming since the middle of the XX century”*. Local effects

⁴ Doran P. T., Zimmerman M. K. Examining of Scientific Consensus on Climate Change // EOS. Climate Change. 2009. Vol. 90, No 3.

⁵ www.gallup.com/poll/1615/Environment.aspx.

⁶ Report on Assessment on the Climate Change and Repercussions in the Territory of the Russian Federation/Rosgidromet, Moscow, 2008. <http://climate2008.igce.ru>.

such as cold winter of 2009-2010 in Europe and Western Siberia cannot serve as indications of the “return” of the climate to its previous state: it was significantly warmer than normally in similarly large territories of the globe at the same time, including Russian North-East. *Rosgidromet’s* report on climate characteristics (March 2005⁷) specifically points out to the fact that the tendency remains unchanged and the heat wave that hit many regions of this country last summer is yet another evidence. However, the scientific consensus refers only to the growth of average temperatures on the Earth. So far there are no answers to two main questions. First, how will ocean respond to the increase of CO₂ concentration in the atmosphere? At the moment it absorbs almost half of the greenhouse gases emissions, but will this indicator increase or decrease? Second, how does the average temperature increase translate into the growing number of and aggravating power of natural disasters, in other words – how to measure the scale of damage? Assessments are ready for the whole world and for some regions, but details and proved figures are not available in most cases.

There are many unresolved issues and discrepancies in the science of climate, and they associate with the need to move to the next level of detailed elaboration rather than struggling with notions of what determines today’s climate change. There is enough knowledge to launch preventive measures that *go along with* national development priorities but there is a dearth of knowledge that turns emission of greenhouse gasses into *a priority* before social and economic development objectives. And this is exactly what was observed in Copenhagen.

Speaking generally, states are guided by the principle of precaution; they prepare themselves for the worse in terms of adaptation both to new conditions and to the demand to reduce emissions as much as possible. However, as Copenhagen demonstrated, environment and disaster ministers understand this principle very well, while ministers of economics and finance not always do so.

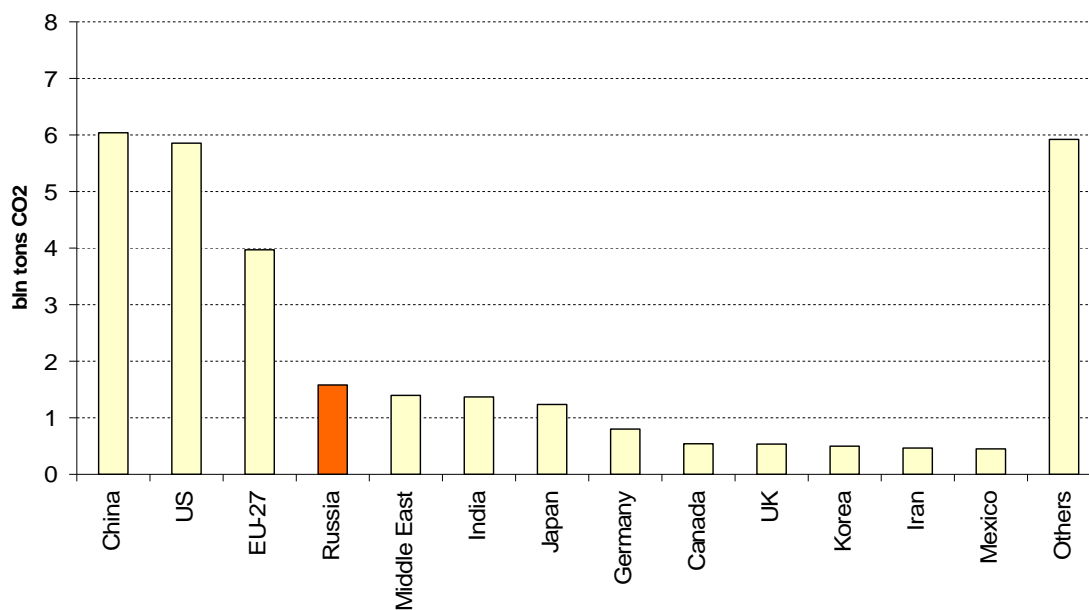
3 From Rio do Copenhagen: Many Years, Modest Results

Main goal of the UN FCCC was to stabilize the greenhouse gasses concentration in the atmosphere at the level that won’t have dangerous anthropogenic impact on the

⁷ Repot on Climate Characteristics in the Territory of the Russian Federation in 2009/Rosgidromet. Moscow, 2010. www.meteorf.ru.

climate system within time periods that allow natural adaption of ecosystems to the climate change. States that are responsible for the great bulk of CO₂ emissions appear in Figure 1. The UN FCCC, effective as of March 21 1994, designed the general outline of the current problem. However, conditions for its implementation were defined later at the Kyoto conference and are known today as the Kyoto Protocol.

Figure 1. States producing most of the emissions CO₂, 2007 (bln tons)



Source: IEA⁸.

By 2010 over 190 states ratified the Protocol – almost every country except for the US. It put objectives to reduce or stabilize greenhouse gases emission during 2008-2012 as compared to 1990 in front of developed countries and countries with economies in transition⁹. Industrial states – members of OECD as well as countries with economies

⁸ Here and further on the issue in question is only CO₂ emission resulting from burning fossil fuel: IEA has complete information only for this subject for all countries to allow appropriate comparative analysis. Sixty four percent of all greenhouse gas emissions occur from this source. Also important happen to be CO₂ emissions resulting from deforestation of rain forests, mainly in Brazil, Indonesia, and some other countries. About 20% of emissions attribute to methane emission, mainly in the agricultural sector. Emissions of N₂O and other anthropogenic gasses are increasing rapidly; however, they do not contribute significantly to the overall effect.

⁹ Most essential issue with the current Protocol is that it does not impose objectives to reduce emissions on the world economic leaders – China and India (as developing countries are not included into Appendix B) and USA that have not ratified the Protocol.

in transition accepted main objectives to reduce emissions or keep them at the 1990 level (along with OECD countries they were included into the Appendix B to the Protocol).

European Union should cut down emissions by 8%, Japan and Canada – y 6%, states of the Eastern Europe and Baltic states – in average by 8%. Russia and Ukraine made a commitment to retain annual average emissions in 2008-2012 at the 1990 level.

Today under the auspices of the UNO the so called post-Kyoto Agreement is in development, it aims to fight climate change, and it will come into force not earlier than 2013. This agreement will envisage more serious targets for emission reduction. Next round of negotiations will take place on December 7-18, 2009 in Copenhagen.

According to the academic community – climatologists, environmental specialists, and specialists in allied disciplines that make up the Intergovernmental Panel of Experts on Climate Change (IPCC), to achieve some kind of solution of the anthropogenic climate change by 2050 global emissions of greenhouse gases should decrease twofold as compared to the 1990 level. Scholars suggest, as the first step, to achieve 25-40% baseline cut in emissions of developed countries by 2020. The issue in question is control over the global temperature warming by 20C against the warming threat of 60C as compared to the preindustrial level of the mid XIX century.

Organizers of the Copenhagen conference assumed that the final agreement will comprise three sections: political structure framework; a package of financial measures; and checklist of practical steps to reduce emissions approved by all regions. The political framework was to include more substantial objectives of developed countries on rapid cut of emissions, and these were to be supplemented by developing countries agreeing to significantly expand nationwide measures to battle climate change consequences.

To achieve a breakthrough in this sphere developing countries need to enable sharing “climate friendly technologies” with developing countries on the basis of their collaborative application and efficient financial model. Moreover, the latter insist that developed countries where main climate change issues originate today should provide

These objectives constitute key arguments of the Kyoto Protocol critics who justly hold that keeping with the Protocol won't do much in terms of climate change prevention.

for sound economic development of developing countries and direct financial aid in order to reduce the climate disaster threat. Needless to say, in their views this aid should be complemented to other development funding made available through other channels.

4 Copenhagen: Whose Failure is It?

The welcome UNO Conference on Climate Change in December 2009 in Copenhagen concluded with some unexpected results. It was “a complete flop” for the more radical greens and mass media. And perhaps for the entire international climate bureaucracy and UNO on the whole it was viewed as a failure too. The UNO turned out to be ineffective, unable to tackle a new large-scale and complex task.

More important, Copenhagen results undermine the global carbon market. It became a real blow on those who are involved in the drafting and implementing Kyoto projects on emission reduction or intergovernmental quota trade. By today about 22000 projects stemming out of the Kyoto Protocol have been approved and about same number are in process of being drafted¹⁰. Overall worth of all projects, including those in applications, in emission reduction numbers is about 3blns of CO₂- equivalent. On the basis of current and forecast quota prices, this amount is worth about \$30bln for five years – from 2008-2012¹¹. Quota trade adds to the general figure no more than 20-30%. The flow of these Kyoto climate investments – \$6-8bln per year – may cease.

However, according to the market players, hypothetically speaking, should the Kyoto Protocol be extended in its current format, its considerable growth is unlikely. All leading buyers – EU, USA, Japan – declared in Copenhagen that they did not consider global carbon market as key economic instrument in the sphere. They are primarily concerned with building up or modifying internal markets and express skepticism in relation to Kyoto projects on emission reduction. Many environmental organizations hold the same attitude and look upon these projects rather as a means of generating

¹⁰ The Kyoto Protocol provides for three mechanisms: transnational quota trade among developed countries including Russia and Ukraine; project activity in a country when the actual emission reduction is remunerated by a overseas investor of the project. For developing countries the appropriate term is “Clean Development Mechanism” (CDM), and for developed countries – “Joint Implementation Project” (JIP) (see <http://cdm.unfccc.int/index.html> и <http://ji.unfccc.int/index.html>).

¹¹ www.pointcarbon.com

funds and not so much of gaining social and environmental benefits. Clean Development Mechanism is often seen as “moving money from the pockets of the poor in affluent countries into the pockets of wealthy people in poor countries”.

In Russia much is talked today about the need to participate in Kyoto projects and quota market. This country is only entering the market, which is a reasonable move, yet only environmentally viable projects should be selected for the purpose. Our penetration into the market cannot be great since China, India and Brazil already hold dominating positions. Therefore, should the global carbon market collapse, Russia won't lose much as a result. And it is more important to stick to strategic development: create an internal market as a means of market control of energy efficiency and energy saving market, as well as build up relations with internal markets of other countries in long-term perspective.

For more disadvantaged states Copenhagen meant a bigger loss. It did not build up on Kyoto results but shifted the paradigm which inevitably meant delay in so much needed funding and aid for coastal states, dry regions, and smaller island countries. However, in perspective, they won. The Copenhagen Agreement provides for an enormous aid: \$30bln for 2010-2012 that will increase to \$100bln per year by 2020. Should the Kyoto approach had been extended, it is doubtful that more disadvantaged states would have got such generous promises.

Expert community was well in advance aware of the fact that no legally binding agreement would be in Copenhagen – too many contradictions had generated among the participants¹². It was hoped yet that the document to be signed would be “politically binding”, and this forecast came out partly true. The conference resulted in a three-page agreement drafted by a group of political leaders who do not hold UN decision status.

The agreement¹³ suggests that anthropogenic climate change is one of the top-most issues of today and it should be controlled within certain, relatively safe limits. The

¹² Two-three months prior to the conference both experts and officials, and even Executive Secretary of the UN FCCC Mr. Yvo de Boer had sent out a warning: no agreement would be signed, a political agreement is best what can be hoped for. That was what Prime Ministers of Russia and Denmark said early November 2009.

¹³ The full text of the agreement can be found at: http://unfccc.int/files/meetings/cop_15/application/pdf/cop15_cph_auv.pdf. See also

value of the global ground level temperature growth by 20C serves as the indicator of the changes. Measures of urgent assistance will be taken to provide help to most vulnerable countries: small island states, African countries effected by drought, etc. Leaders of developed countries suggested to go forward with these measures already in 2010 and agreed to allocate \$30bln for 2010-2012. Countries are setting up *Copenhagen Green Climate Fund* to support activity aimed to reduce emissions, stop deforestation, technology transfer, and capacity building in developing countries. Developed countries intend to gradually increase the funding and agreed to bring it to \$100bln per year by 2020. Significant portion of these funds will be channeled through this foundation, and the rest through other assistance channels. This new funding is complementary to the funds allocated to fight poverty, for healthcare, etc. Parties were successful in agreeing to continue the negotiation process in 2010 in special working groups on long-term cooperation measures, as well as on the Kyoto Protocol.

Thus, the new agreement is in fact *a political platform for future activity* that will make it possible for different types of economic and financial “trees” to appear: global, multipronged, two sided, and, most important, national. Although, as ‘a visitor” to Copenhagen noted accurately: *“We are planting trees whose shadows we will not get to enjoy – everything is done to prevent future threats and losses”*.

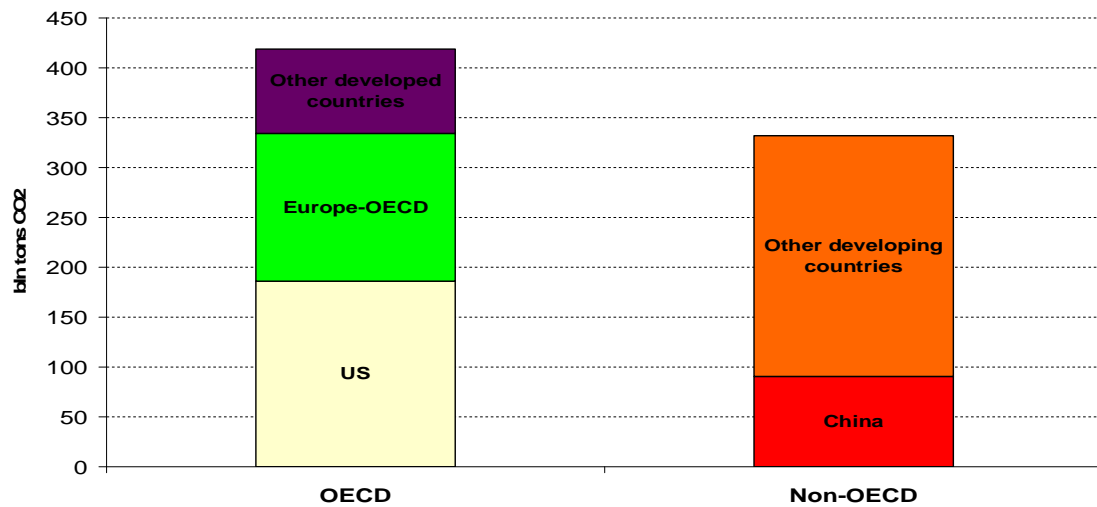
China succeeded with its goal in Copenhagen so that national measures to curb climate change do not become the subject of international expertise in case when there is no need for international funding. And, in fact, the Copenhagen Agreement does not stipulate any sanctions or reporting mechanisms either in relation to accepted objectives on greenhouse gases emission reduction or any planned activities.

5 Global Stroke – Reasons for the Failure in Copenhagen

At the core of failures lies the rigid stand of China (and of India that supports China) against international objectives on emission reduction although developed countries had made substantive concessions. Affluent states of the Persian Gulf, which in fact should “start paying” rather than shelter themselves under the guise of developing countries, contributed to the process, as well countries of the Bolivarian revolution did.

detailed annotated text of the Copenhagen Agreement in Russian at WWF Russia site: www.wwf.ru/data/news/5916/kopengagenskoe_soglasenie.doc.

Figure 2. Amounts of emissions of CO₂ accumulated by developed and developing countries. 1971–2007 (bln tons CO₂)



Source: IEA.

China's position, as well as that of some of other developing states is understandable – developing states should pay for all, albeit it is not a constructive stand. They hold responsible for today's warming primarily developed countries that produced most of emissions in the XX century. Every year this statement loses its relevance: between 1971 and 2007 developing countries were responsible for 44% of total accumulated emissions (including 12% of China, see Figure 2). At the same time, emission per capita in the majority of developing countries is significantly lower than in developed countries (with the only exception of the Middle East where it is higher manifold; see Table 1). As welfare of their population increases, growth of energy and fuel consumption is inevitable, and, subsequently, so is the growth of CO₂ emission. In this context it would be dangerous to take on objectives to reduce emissions.

Table 1. CO2 emission level in developed and developing countries (tons per capita)

	1971	1990	2000	2007	2007/1990 %
<i>Developed countries</i>	10,6	10,6	11,1	11,0	3,4
USA	20,7	19,4	20,2	19,1	-1,7
Germany	12,5	12,0	10,1	9,7	-18,9
Japan	7,2	8,6	9,3	9,7	12,2
United Kingdom	11,2	9,7	8,9	8,6	-11,0
France	8,2	6,1	6,2	5,8	-4,0
<i>Developing countries</i>	1,5	2,2	2,1	2,8	24,4
South Africa	7,7	7,2	6,8	7,3	0,4
China	1,0	2,0	2,4	4,6	134,4
Brazil	0,9	1,3	1,7	1,8	40,3
Indonesia	0,2	0,8	1,3	1,7	111,4
India	0,4	0,7	1,0	1,2	71,0
<i>Russia</i>	8,2	14,7	10,4	11,2	-23,7

Source: IEA

Failure in Copenhagen does not suggest that there won't be any other climate agreement or that every country will have to deal with the climate change issue on its own. In fact, many developing and developed countries, including Russia¹⁴, China, and India announced their intention to control or significantly reduce CO2 emissions per GDP. Thus, China plans to reduce carbon intensity of its entire economy (CO2 emission per GDP) by 40–45% by 2020 as compared to 2005. India announced corresponding reduction by 20-25%. Such steps will supplement government energy politics and will demonstrate their determination to resolve the problem of climate change, as well as readiness to take the dialog further. However, the main reason for such decisions lies not with climate change issues but with securing national energy safety for energy balance in these countries is going to shift by 2020 as a result.

¹⁴ Russia declared its plans to reduce the level of emissions by 25% by 2020 as compared to 1990 (by 15% earlier). This places this country among those who will support negotiations and demand more radical action on the part of developed countries. However, such objectives suggest that in fact emission level will go up because the current level is lower (in 2008 by 32% lower than in 1990).

Many countries, including India and China, put special emphasis on energy efficiency and wider use of renewable sources to multiply energy production. National Plan of Action in India makes provisions to reduce energy intensity of the economy by 20% and, specifically, to commission solar electric plants with total power capacity of 20 GW. China too has plans to use more alternative source of energy. According to officials, by 2050 the share of renewable energy might equal 40% in country's balance of energy. This being said, China includes here not only large HPP but nuclear energy too. By 2020 the share of renewable energy sources should constitute no less than 15% and, according to the government, will exceed 18%. One of priority areas for development is wind energy. Chinese Department of Energy approved a new plan that makes it possible to increase capacity of wind power stations up to 100 GW by 2020. If China succeeds with this plan, by 2020 wind stations will produce more electric power than nuclear stations. Because of the high dependence of power industry on coal burning, which results in increased emissions, China made plans for robust introduction of clean technologies of burning coal.

Failure of the Copenhagen conference once again pointed out to the fact that is extremely difficult for states to work out decisions that directly touch upon their economic interests. International negotiations have set some good practices of consensus (e.g. the Montreal Protocol on Substances that Deplete the Ozone Layer). International community showed its solidarity in banning whaling too, as well as ban on the use of the Antarctic region's resources. There are two reasons for success here. On the one hand, these tasks were of relatively special nature and did not come into friction with fundamental parameters of economic development. On the other, monitoring the compliance with the agreement appeared quite uncomplicated, and its control fairly efficient. However, when results touch upon even some industries of the national economy, international negotiations progress very slowly (it would suffice to recall the WTO negotiations).

Today environmental awareness in developed countries is fairly high, and populations are prepared to somewhat sacrifice their economic interests in order to resolve environmental tasks. But it is unlikely to expect that politics and populations of developed states will agree to put world environmental issues prior to economic interests of their own countries. Therefore, expectations of international decisions of revolutionary character in the sphere of climate change should be kept low. More likely,

different carbon taxes will appear and spread out in the world trade as an instrument of economic pressure on some countries, and developing countries in the first place.

6 From Kyoto to Copenhagen – Shift in Paradigm, Not a Step Forward.

During 2009 negotiations within the UN FCCC followed two paths. Special Working Group on Long-Term Collaboration Measures (SWG LCM) was put to work at the same time as Special Working Group on the Kyoto Protocol (SWG KP), the latter was responsible for drafting objectives of the Appendix 1 countries for the second period after Kyoto. Developed countries, and namely Russia, again and again spoke out against such dualism and spoke of the lack of prospects for Kyoto. Counterarguments boiled down to the fact that nothing more important than Kyoto exists today and it is imperative to preserve it, build up and develop till a new agreement is warranted. But can Kyoto-2 resolve the global task?

Table 2 reflects fundamental differences in the ideology and goals of Kyoto and Copenhagen. The Kyoto Protocol is 15 year old, it was appropriate for that time and on the whole all participating countries comply with it. Inadequate reduction of emissions in Canada and Japan are easily made up for by reductions in Russia and Ukraine. Countries report their emissions and carry out CDM and JIP projects; a limited quota trade exists. But all of this has almost no effect either on the current or future global emissions. Assistance for emergency adaptation is not provided to most vulnerable countries.

To enable extension of the Kyoto Protocol $\frac{3}{4}$ member countries of the UN FCCC should agree to it but not the US and Russia. The 55% indicator of member-countries against total emissions of the Appendix 1 countries is required to enforce the Protocol, and not to extend it. Theoretically speaking, developing countries can ensure the required number of voices. However, starting with 2012 it will have power only for the countries of the second period: developing countries and, hypothetically, EU. Most probably, only CDM projects will remain.

Table 2. Analysis of the Kyoto Protocol and Copenhagen Agreement

Indicator	Kyoto Protocol (1997)	Copenhagen Agreement (2009)	Comments
Evidence based global goal	No	Yes	When the Kyoto Protocol was drafted, the problem was not yet fully and honestly comprehended, neither were in place evidence based goals for emission reduction
Data on emissions	Appendix 1 countries, others on volunteer basis	All except for more developed countries	12 year ago it was developed countries that made major contribution to global emissions. Today China holds the first place, and problem solution is sought in emission reduction in leaders of developing countries
Participation of all countries in emission reduction	Only Appendix 1 countries 1	All except for more developed states	
Mechanism of involvement of all countries in emission reduction	Clean Development Mechanism	Accepted objectives	Approx. 4 thousand CDM projects – it's a drop in ocean in comparison to the scale of economies of leaders of the developing world
Engagement of all countries unto the global carbon market	EU market and UN FCCC projects "tentacles", JIP, and quota trade	Creation of national/regional instruments of market control	Till up to 2020 development of the global market is unlikely, rather national and regional market will shape up, and then bilateral relations will be established between them
Financial mechanism in place	Adaption fund (deductions from CDM)	Financial mechanism. Goal: \$100 bln per year by 2020	Adaptation fund of the Kyoto Protocol cannot provide serious funding with any scenario developing with CDM, JIP, and quota trade
Capacity to resolve environmental and climate problem of deforestation лесов	NO	Yes	Special channel is set up for activity including for potential funding flows
Systems of compliance control	Formally yes	Actions of countries does not have legally binding power	In reality Kyoto does not provide for objectives enforcement measures
As perceived by the general public	Business-instrument for quota trade	Agreement on joint activity of the whole world	Copenhagen is seen as a weak agreement, yet the assessment of Kyoto is even worse: a feeder for the carbon business
<i>Ideological paradigm</i>	<i>Start to act. Developed countries set an example for others</i>	<i>Make a real step towards global solution of the problem by the mid century</i>	<i>Economic organization of the world has changed over 15 years</i>

The Copenhagen agreement suggests either radical expansion of financial and economic horizons of international cooperation with political agreements or approval of the UN FCCC decisions in 2011-2012; their compliance power will loosen up on its bases. The reason for that lies in the fact that there are no liabilities attached: it was denounced by leaders of the developing world that joined the BASIC (China, India, Brazil, and SAR) group in this form or the other. The new paradigm suggests their mandatory participation, but the agreement by default drops to the level of one or several multinational events within UN FCCC decisions that are not to be ratified. Now 98 countries¹⁵ expressed their desire to be listed as member countries of the Copenhagen Agreement as that of a document having political power. All developed countries and leaders of the developing world put forward suggestions on emission reduction or control that are assessed at the level of 2020 as 5bln t CO₂. This on the whole reflects the global tendency for energy intensity reduction in economies of leading states by 40% over 2005–2020.

7 How Important Is to Have a Liable Agreement?

“Bottom up” path that appears only logical for scholars and environmental specialists – from defining the global climate goal (in 0C), calculating it into the global emissions dynamics, and then dividing it fairly among countries – does not work in reality, and this is what Copenhagen proved. The matter here is not so much in different understanding of the “fairness” of the approach (much argued at the conference nevertheless) as in the fact that the direct threat is delayed for 20-40 years from now. The situation in more vulnerable countries is different: they already sustain losses and hence insist on radical and immediate emission reduction.

While the direct cause-effect relation “*more CO₂ is emitted, damage is done to the country where the production is located*” is not established, it is very complicated to talk about a strict liability system. Top measures turn to be half voluntary half compulsory. At the national level countries force business to adopt new technologies earlier than it is commercial justified. At the international level appropriate objectives are accepted on volunteer basis.

¹⁵ UN FCCC <http://unfccc.int/home/items/5262.php>

This is the context in which legal (non)liability should be accessed. Many mass media unduly simplify the situation by assuming that any “legally binding” agreement is a serious document, while a political document is not. Documents that do not have legally binding power may be pretty powerful if their compliance meets individual or mutual interests of parties. And this is exactly what the US, Russia and other developed countries stated.

However, any binding agreement may appear to be ineffective should one of the parties choose not to abide with it while a handful of international and legal tools for enforcement are limited. The Kyoto Protocol serves as an illustrative example: Canada does not comply with it and officially informs of its decision. No economic or political repercussions follow. There is a formal rule that allows to borrow future quotas with the emission factor 1.3, however neither Canada, nor other countries expressed willingness to apply it. It is much easier for them to replace the Kyoto Protocol with a new agreement.

Certainly, the carbon market cannot exist without liabilities, yet it takes national legislation to control national and regional markets, and there is no mention of quota trade at least before 2020.

Legal binding is mainly required for financial flows. For example, already in 2002¹⁶ the Monterrey Agreement that provided for the increase of Official Aid to Development (OAD) up to 0,7% of GDP of developing countries. But in reality the agreement is not performed: only five mid-size developed countries reached the 0.7% level, seven others promised to meet the target by a certain date. Largest “financial seven” countries are quite far-off the mark: by average their OAD equals 0,23%, which translates into the average value of 0,28% for all developed countries.

Countries that agreed the terms of the Copenhagen Agreement traded its “legal binding” for objectives to take action by the leaders of the developing world. The latter think the new provision serves as a safeguard that prevents bringing to table abrupt emission reduction too early as they are not ready for such development. As Mr. Yvo de Boer remarked, *“for some countries it might be easier to get on the train if they know that they keep the right to get off”*. Since no delay is permissible in tackling global

¹⁶ Adopted during the International Conference on Financing for Development held in Monterrey, Mexico from 18 to 22 March 2002.

climate changes, it would not be reasonable to turn down the Copenhagen Agreement only for its lack of “legal binding” nature.

8 Opportunity to Generate Funds

Not once leaders of developed countries stressed that the new agreement, similarly to national measures, should not present a financial burden but a technological challenge. What is meant here is *accelerated introduction of technologies with low greenhouse gasses emission*. However, without “cash” it is impossible to carry out measures on adaptation, deforestation, and degradation of rain forests. Also, promised amounts are so significant that it would be wrong to rely solely on OAD, or developed countries taxpayers’ money. This is why the Copenhagen Agreement says: “For the purpose of settling needs of developing countries, developed countries put forward the goal *to jointly mobilize \$100bln per year by 2020 from a wide range of various sources, including government and private, bilateral and multilateral, as well as alternative sources of funding*”. The term “alternative” can mean market mechanisms, e.g. national or regional quota trade, introduction of quota auctions, deductions from the international bunker fuel (used for aviation and/or sea transportation), this or other payments or taxes, introduced at international, regional, or national levels. For example, it is discussed whether to recall subsidies for mining fossil fuel as a source of funds.

Table 3. Approximate assessments of possible sources of funding for the Copenhagen Agreement

Sources of income	Min.- Max assessed level, 2020, bln \$		Approved proposals
Official Development Aid (ODA)	~10	~50	Approximate assessment. Today entire ODA is about \$120bln, climate receives ~1bln. Developing countries insist on additional funding, and not on redistribution of funds.
Allocations such as CDM or JIP	0,3	1,7	Range of assessment depends on the share allocated (2–12%), as well as on the volume of projects and transactions. Optimistic scenario of CDM and JIP development based on UN FCCCC data.*
Payments for transportation – by air	~4	~12	Approximate assessment of data contained in proposals of countries on bunker fuel for international transportation by air and by sea
– by sea	~6	~17	
Auctions of permits for emissions	4	40	2–6% of quotas of all developed countries are on sail at \$\$20-50 per tons. Byers are private companies or developed countries.

* Investment and Financial Flows to Address Climate Change: Background Paper / UNFCCC, 2007.
http://unfccc.int/files/cooperation_and_support/financial_mechanism/application/pdf/background_paper.pdf.

Table 3 reflects expert assessment of sources as suggested in Copenhagen (more recent ideas, such as taxation of bank operations were not discussed there in detail). It did not include summaries of maximum and minimal assessments since, perhaps, an “interaction” of sources, that is larger traditional subsidies from government budget of developed states (OAD) can be made in lieu of payments for aviation and sea transportation, as well as by income from auctions. Quite the opposite, rigorous introduction of payments and auctions can lead up to reduction in OAD.

9 What’s the Bill for Each One?

The Copenhagen Agreement for 2010-2012, as mentioned earlier, earmarks the sum of \$30bln, at that this is new money and not restructured funds for other purposes. Also, the Agreement says: “Significant portion of such funding should be channeled through the *Copenhagen Green Climate Fund*”, which was set up by the political will in Copenhagen. This fund, it is expected, should work under the supervision of the UN

FCCC, eliminate a number of management challenges and ease access to funds that developing countries talk to such about. Significant portion of funds may flow in through other channels: first, through the existing aid system (Global Environmental Fund, World Bank, Regional Development Banks, UN Executive Agencies). Second, through national agencies of international aid of developed countries and corresponding bilateral agreements¹⁷.

In Copenhagen leaders of the USA, EU and Japan provisionally divided the commitment between three of them: \$10bln for each for 2010-2012. Yet the issue of “fair” share will come up again from time to time and in reference to all countries too except for the developed ones. Current fees to the core budget of the UN FCCC give some idea of what might be considered a “fair” payment (see Table 4). These are mandatory payments of countries calculated on the basis of GDP per capita and size of the economy. Besides, there are designated voluntary funds coming from developed countries listed in the Appendix 2 of the Convention, which did not include Russia and other states with transitional economies. The UN FCCC core budget in fiscal 2009 received in total about \$16mln., that’s with all objectives met by large states.

Table 4. Mandatory contributions to the UN FCCC core budget on the international scale*

Country	% of the entire amount
Australia	1,7
Brazil	0,9
EU: 27 states and the EU as a Convention Party	40,4
India	0,4
Canada	2,9
China	2,6
Mexico	2,2
Norway	0,8
<i>Russia</i>	<i>1,2</i>
Saudi Arabia	0,7
USA	21,5
Switzerland	1,2
South Korea	2,1
Japan	16,2

¹⁷ The Memorandum of Understanding signed between the US and Brazil on March 3, 2010 for 10 years could be called ‘the first robin’. It proposes provision of measures aiding to cease deforestation and degradation including preservation of biodiversity, as well as facilitating low carbon development. The Memo contains a reference to the Copenhagen Agreement as the grounding political basis of the document.

* Contributions for 2009 financial year as on November 15, 2009// FCCC/SBI/2009/INF.10.
www.unfccc.int

Share of the EU, US and Japan is 78,1%, and on the whole all developed countries (including Russia that pays 1,2%) make up 88%. Contributions of China and India equal 2,6% and 0,4% respectively. Copenhagen Agreement stresses that the aid comes only from developing countries unlike the way the core UN FCCC budget was formed. That means that the ratio of the contributions of developing countries against the total amounts will exceed 12% while contributions of the EU, USA, and Japan come to 87,4%.

Another issue discussed in Copenhagen was whether other criteria for making funding decisions should be applied, such as indicators of emissions (absolute or per unit volume), historical responsibility of countries (cumulative emissions, for instance, since 1900) and other. But due to specific peculiarities of countries consensus was not reached on either of them. Namely, some not so rich countries have high emissions per capita or per GDP unit determined by their GDP structure. China's historical responsibility has "out ridden" Russian indicators, etc.

10 How to Raise Private Funding?

In and after Copenhagen almost all world leaders stressed the fact the success of the approach stipulated in the Agreement depends on the scale of engagement of business and private funding. For the end business should treat both the Agreement and national measures not as a financial burden but as a technological challenge with a great potential for the leaders' lucrative dividends in the future and expansion into new markets. By the pace of introduction of new technologies all economies break nominally into four categories:

1. "Pioneers" tap into one or another's niche, e.g., manufacture of modern wood fuel. They are interested in the earlier implementation of measures on emission reduction. However, normally, this is relatively medium-size business.
2. Economy "drivers" – large companies that already staked in the fastest way of mastering new technologies along with driving out competitors and tapping into new markets in the future. Examples: IBM, Siemens, British Airways, Goggle.

3. The bulk of economic units are anything from large plants to householders' societies. Only their engagement in the process will enable massive shifts in the economy, as well as investments into new equipment, goods, and technologies. The role of state is very important here, for it establishes standards, norms, and rules, and also oversees compliance.

4. Obstructers stake in maintaining the current situation for the longest period possible earning maximum profit. Examples: Exxon Mobile, General Motors, Arcelor Mittal.

11 Russia's Interests in the Climate Context

Russia, willingly or unwillingly, already made its substantive contribution into the greenhouse gasses emission reduction: compared to 1990 CO₂ emission have gone down by 1/3. Russia's objective to reduce emissions by 2020 by 25% at of the 1990 level, being although in fact a growth, in practice will mean transition to the low carbon growth strategy. The RF Concept of Long-term Development to 2020 should provide for its practical enactment, and one of its provisions is about increasing energy efficiency of the Russian economy by 40% (as compared to 2007). High cost of energy will become the strongest incentive for energy saving. Integral environmental policy of the state will be instrumental in getting the message across to all economy players that environmental awareness should become a standard for business behavior and an unconstrained element of investment solutions.¹⁸

Nevertheless, should this strategy succeed Russia's relative indicators of emissions – per GDP unit and population size in comparison with the majority of countries will still be notably higher. The distinction is drawn between recoverable inefficiency and peculiarities of the Russian economy where the GDP structure is dominated by energy intensive industries (such as metallurgy, chemistry), and some production and services industries (oil and gas transportation) are focused on external markets, which should suggest certain internalization of Russian emissions.

Given the global scale of the problem, much less depends on Russia than on largest current (China, USA, EU) and potential emitters (India, Brazil, Indonesia, etc.). Russia

¹⁸ *Bashmakov I.* Low Carbon Russia: Perspectives After the Crisis//Questions of Economy. 2009. № 10.

today is far behind China and USA ranking third in the world in cumulative emissions volume (excluding rainforest deforestation). So, these countries, as well as the EU, India, and Japan will determine success of the battle for emission reduction on the global level. The role Brazil and Indonesia play is great; it is essential to cease deforestation that results in CO₂ emission of about 2,5bln and 1,5bln tons annually respectively. Russia can contribute to the progress of the battle with climate change but not so much in emissions reduction (undoubtedly is a must) as drafting solutions for efficient use of energy. It will thus become a leader in the sphere.

The climate process associates with certain threats too, and to eliminate them it will take some early preparation. These are two types of threats: directly caused by the climate change (regardless of the nature); and subject to the politics of some countries and integration structures.

1. Direct negative effect of the climate change calls for measures of adaptation, monitoring, development of warning systems, etc.¹⁹ The number of hydro meteorological phenomena over the last 15 years has doubled, and there is no evidence the tendency will change²⁰. Obviously, action should be taken immediately.

2. Damage caused by possible “carbon protectionism” such as introduction of various payments for bringing into a country high emission products, compensations for home producers, etc. Possible scenarios are much discussed in the US Senate, as well in the EU Parliament. Among first “signals” are: for example, introduction of payments for landing aircrafts on the EU territory. In many cases there are, in essence, “protective measures” against foreign products or services under the disguise of the climate rhetoric. The best way to carry on battle in this regard will be to overcome individual technological backwardness and reduce emissions of specific greenhouse gasses per product unit. Should Russia join WTO and necessary agreements be drawn within this organization, it will allow this country to effectively protect its positions.

In 2010 negotiations will focus mainly on rainforests, financial aid to developing countries, and technology transfer. “Carbon protectionism” is discussed too under and is referred to in negotiations as “response measure”.

¹⁹ Assessment report on climate changes and their consequences for the Russian Federation territory/ Rosgidromet. 2008.

²⁰ Report on climate peculiarities on the Russian Federation territory for 2009/ Rosgidromet, 2010.

Russia is not directly associated with the problem of rainforests, it should not allow discrimination of domestic forests. So far negotiations that concern Russia mainly focused on reporting and accounting for forestry. We should accept some rules and methodology realistically applicable in the context of and to the scale of Russia's territories. Besides, it would be desirable for the new agreement to include principles that promote environmentally literate and sustainable forestry in Russia.

It is in Russia's interests to have the next agreement without a financial mechanism providing for new financial institutions (that is, resting on the current system) with a free choice of geographic and content priorities. In turn, perhaps, Russia we would need to offer a more weighty financial aid – at \$1-2bln per year level. However, if Russia can control “points of its application”, these funds will be viewed as Russia's investments into state economy, namely Central Asia.

High pace of negotiations is unlikely until developing countries reject the idea of extending the Kyoto Protocol. Russia's position was clearly expressed again and again: its extension is unrealistic; a new agreement should be signed as the second phase of international activity to battle climate change. Russia is interested in slow development of negotiations after Copenhagen, in gradual restriction of “carbon protectionism”, as well as converting negotiations for its advantage and acting in a single block with developed countries (in negotiation terminology – the UN FCCC Appendix 1 countries). It is reasonable to simultaneously work out bilateral agreements with the USA, EU, Canada, Norway, and others that would exclude any potential for “carbon protectionism”. At the same time, they would ensure that Russian projects of joint implementation of the Kyoto Protocol continue, including forest projects that, regrettably, are yet none in this country.

Yet, it is most important for Russia to increase energy efficiency of the domestic economy. Environmental specialists again and again criticized Russia for its overcautious objectives. The emission level announced for 2020 is by 25% lower than the corresponding indicator for 1990 when no deliberate measures were taken to reduce them. Now measures are in place, albeit they bear no mention of “climate” but “energy saving and energy efficiency”. Why does not the government take the liberty to fully credit its internal decisions as international objectives? Perhaps, there are two reasons: first, there is no confidence that Russia's plans will be met; second, China and especially India set a bad example by not agreeing to fully “convert” internal decisions

into international objectives. In January 2010 after the announcement of plans under the Copenhagen Agreement Russia sent a letter to the UN FCCC with much more modest assessments of future emissions: “by 2020 by 15-25% lower than the 1990 level”. From the economic point of view it is not clear why this country plans to burn so much fuel. Obviously, there is some political game: there is a sense of Russia’s discontent with India’s and some other developing leaders’ activity.

World economic crisis has had a serious effect on energy consumption in the whole world, and thus had impact on the dynamics of greenhouse gasses emissions²¹. After many years of building up global emissions in 2008 their growth slowed down abruptly, and in 2009 fossil fuel emissions reduced, it is estimated, by 3%. The crisis opened up “opportunity window” for quality changes in energy use. This only expands a bit temporary horizons for decision making but does not free of the necessity to act quickly. It should be noted that the Copenhagen Agreement does not contain any economically harmful or environmentally erroneous provisions. In perspective, it can take us to a breakthrough hallmarking the beginning of a new era of effective collaboration among all major states – emitters of greenhouse gases. For this end its provisions should be put into life.

²¹ *L. Grigoriev., V. Kriukov.* World energy at the crossroad: which one is for Russia?//Questions of Economy. 2009. № 12.

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