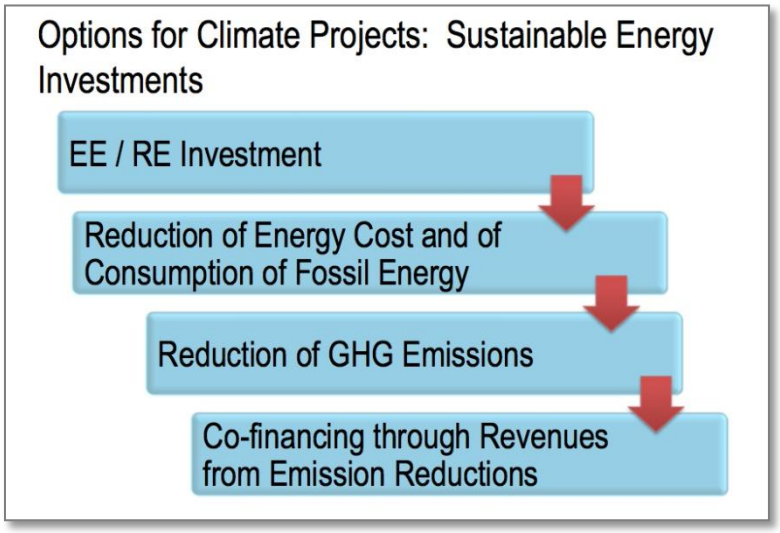
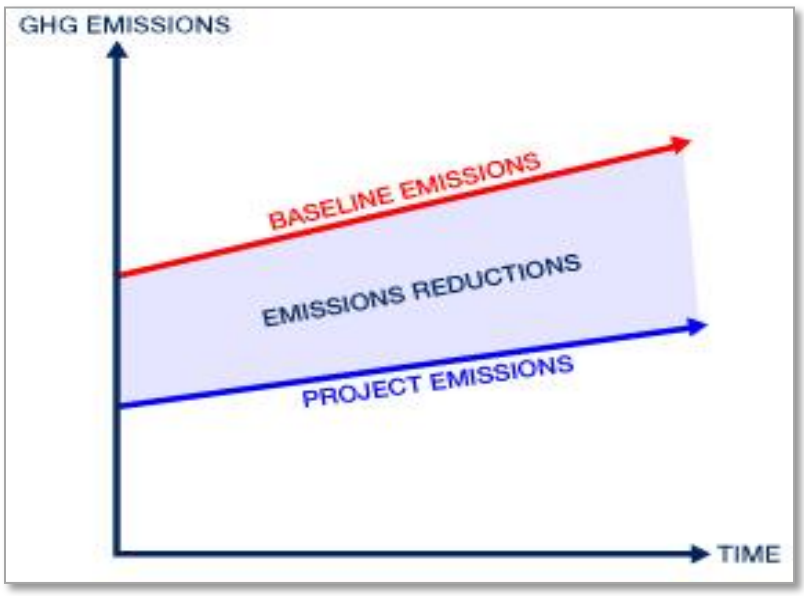
Climate Projects in Russia - General Background

In principal, any investment in renewable energy efficiency (EE) or energy (RE) projects automatically leads to a reduction of greenhouse gas (GHG) emissions. Therefore, such projects have the opportunity to benefit from a new co-financing instrument – carbon financing. Achieved emission reductions represent a new asset - carbon certificates or, under the **Joint Implementation (JI)** mechanism of the Kyoto Protocol, **Emission Reduction Units (ERUs)** that can be sold to the international carbon market.



In order to determine the quantity of Emission Reduction Units that will be generated by a project, baseline and project scenario are calculated and compared according to internationally accepted and approved baseline methodologies.



Example: Installation of a 30 MW wind park in Russia

A wind power project feeds renewable electricity to the power grid, thus replacing energy produced from fossil fuels. It is assumed that the installed wind turbines will produce about 100 GWh per year. The resulting reduction of GHG emissions is calculated by multiplying the annual power production with a grid specific amount of CO_2 emissions, the "Grid Emission Factor". EBRD has supported the determination of Russian grid factors. As can be see from the table below, the factors depend on the region. If the project example will be realized in Siberia, the number of ERUs generated by the project in 2011 amounts to 112.000, whereas the same project implemented in the Ural region would only produce 66.300 carbon credits.

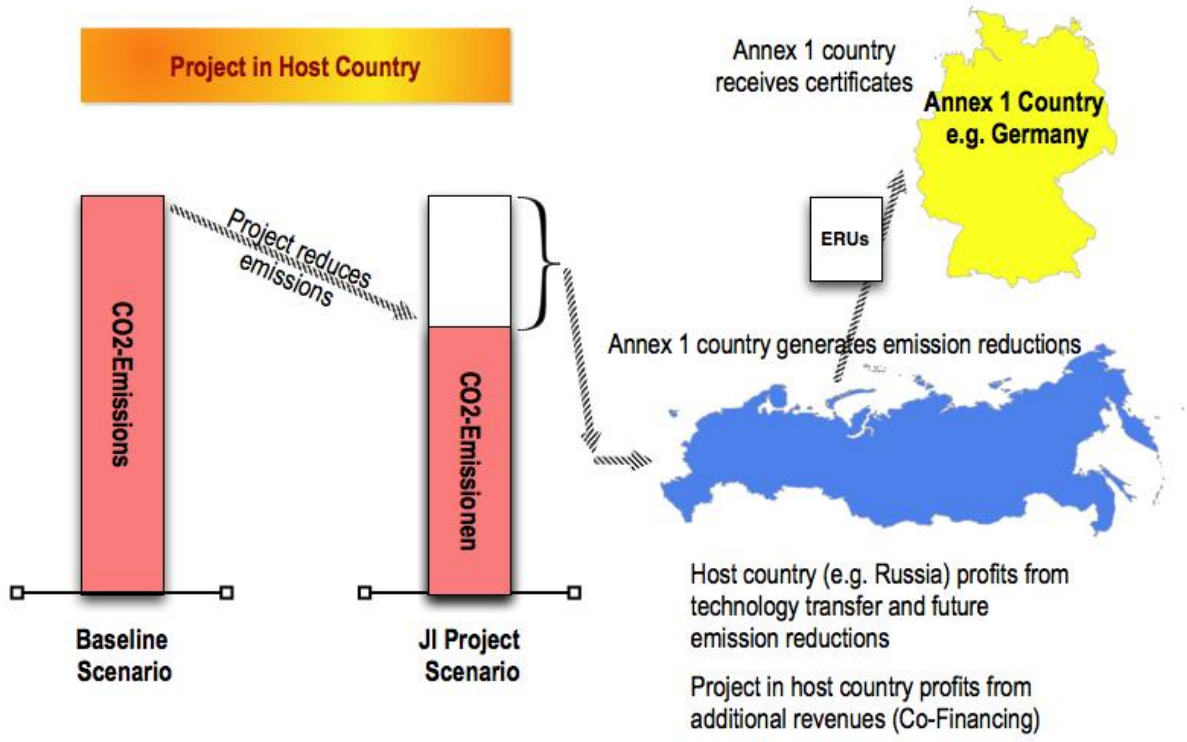
[t CO_2/MWh]		2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
RUSSIA	CM	0.706	0.701	0.706	0.714	0.704	0.695	0.700	0.693	0.697	0.713	0.713	0.717
	OM	0.768	0.767	0.777	0.771	0.767	0.762	0.764	0.765	0.766	0.772	0.775	0.777
	BM	0.644	0.636	0.635	0.657	0.641	0.629	0.635	0.621	0.628	0.654	0.650	0.657
IPS Center	CM	0.644	0.657	0.640	0.648	0.690	0.677	0.658	0.660	0.658	0.693	0.674	0.681
	OM	0.769	0.780	0.803	0.820	0.821	0.810	0.810	0.811	0.810	0.845	0.847	0.848
	BM	0.519	0.533	0.476	0.475	0.558	0.544	0.507	0.510	0.506	0.540	0.501	0.514
IPS East	CM	0.831	0.739	0.885	1.026	0.988	0.970	0.961	0.960	0.962	0.966	0.967	0.962
	OM	1.030	0.943	0.978	0.987	0.976	1.006	1.010	1.011	1.013	1.013	1.013	1.014
	BM	0.633	0.535	0.792	1.065	0.999	0.934	0.912	0.909	0.910	0.918	0.920	0.910
IPS North West	CM	0.567	0.546	0.533	0.481	0.456	0.443	0.468	0.474	0.425	0.464	0.488	0.493
	OM	0.509	0.471	0.460	0.453	0.454	0.422	0.438	0.450	0.462	0.465	0.502	0.527
	BM	0.624	0.621	0.606	0.510	0.459	0.465	0.499	0.498	0.389	0.464	0.473	0.458
IPS Siberia	CM	1.127	1.126	1.120	1.085	1.079	1.035	1.030	1.032	1.036	1.036	1.032	1.030
	OM	1.059	1.061	1.056	1.006	1.022	1.013	1.009	1.009	1.009	1.009	1.009	1.010
	BM	1.195	1.192	1.185	1.165	1.136	1.056	1.050	1.053	1.064	1.062	1.056	1.049
IPS South	CM	0.505	0.465	0.463	0.495	0.492	0.535	0.523	0.489	0.493	0.492	0.492	0.487
	OM	0.757	0.782	0.805	0.776	0.742	0.717	0.715	0.722	0.735	0.736	0.723	0.683
	BM	0.253	0.148	0.121	0.215	0.242	0.354	0.332	0.256	0.252	0.249	0.261	0.291
IPS Urals	CM	0.632	0.637	0.663	0.699	0.622	0.618	0.643	0.627	0.631	0.628	0.624	0.626
	OM	0.678	0.679	0.689	0.698	0.670	0.676	0.674	0.671	0.667	0.656	0.650	0.648
	BM	0.586	0.595	0.637	0.699	0.573	0.560	0.611	0.583	0.594	0.600	0.599	0.604
IPS Volga	CM	0.414	0.417	0.420	0.436	0.452	0.463	0.471	0.461	0.527	0.554	0.566	0.574
	OM	0.562	0.567	0.572	0.585	0.580	0.583	0.587	0.583	0.584	0.575	0.578	0.583
	BM	0.265	0.268	0.267	0.287	0.323	0.343	0.354	0.340	0.469	0.534	0.553	0.565

The amount of carbon credits generated by any renewable energy project, which delivers electricity to the grid, or from energy efficiency projects reducing the consumption of energy from the grid, can be calculated by using the table.

In general, there are two categories of emissions to be regarded in energy efficiency and renewable energy projects: Direct and indirect emissions. Direct GHG emissions occur through the combustion of fossil fuels, during certain chemical processes and

by fugitive emissions like methane emissions from leaks in natural gas pipeline systems, or from waste disposal. Indirect emissions occur due to the use of electricity or heat, which was generated from fossil fuels.

However, projects in the “Host Country” not only profit from having access to additional financial revenues but also from state-of-the-art RE and EE technology transfer.



Carbon Financing Options

In case a project owner has sufficient capacities to organize financing project development and implementation on his own, maximum financial returns from selling carbon credits might be obtained for the project. Any other external funding normally leads to discounted carbon prices.

If the project proponent is free of any obligations against third parties, and is the sole owner of emission reduction certificates, he may choose his best option for maximizing returns from carbon. In principal the following opportunities exist:

ERPA and Spot Market Financing Options		
Option	When	Pro's and Con's
I. Sell ERUs to the carbon spot market (either directly or through tender)	Any time after ERUs have been issued	Good option for obtaining highest price, if project owner (= seller) is ready to take over market risk.
II. Sign Emission Reduction Purchase Agreement (ERPA) with carbon buyer	In principle at any time but normally before implementation of project	Buyer takes over market risk and participates in project risk. This leads to lower ERU prices. Seller has price security and eventually a chance to obtain up-front payments from buyer. In case of a financially well-rated buyer, seller may use ERPA as security for debt capital.
III. Mixture of both options, e.g. ERPA on 50% of expected credits and 50% speculating on spot market		Good model for sellers who would like to be on the safe side and still want to speculate on future market development.

In most cases an **Emission Reduction Purchase Agreement (ERPA)** will be signed between the project owner and a buyer/investor. Most important reason for this is the common need for investment capital. Furthermore, such a financial partnership opens up other opportunities such as

- Joint ventures between partners from different countries that facilitate technology transfer;
- An involvement of a second party with excellent credit rating and/or technological expertise from the start of the project, which again reduces

project risks and allows for alternative business models such as contracting agreements.

An ERPA normally is a forward contract on selling ERUs from a JI project. In the contract prices, conditions as well as liabilities, e.g. compensations in case of non-fulfilment of guaranteed delivery, are defined. Fixed or indexed ERU prices can be negotiated, as well as guaranteed or non-guaranteed delivery.

In general, the conditions specified in an ERPA are valid until the end of 2012, the end of the 1st Commitment Period of the Kyoto Protocol, and only include a paragraph, which grants the right of first refusal for Post-2012 certificates to the buyer.

Annex 1 (JI) countries like Russia have to deal with the **Kyoto Post-2012 insecurity**. If no follow-up agreement to the Koyto Protocol will be signed, the market for credits that are issued on from 2013 is highly insecure. The currently biggest emission trading market, namely the EU-ETS, will stay operational even if there won't be a new treaty under the UN umbrella. However, the amount of emission reduction certificates from the Flexible Mechanisms of the Kyoto Protocol that can be used by European companies for compliance until 2020 has been severely reduced by the EC. There are still buyers who are willing to take over the political risk and who believe in the future value of ERUs, and are willing to sign ERPA's with guaranteed prices also for post-2012 ERU vintages. Consequently, prices offered for post-2012 credits are considerably discounted.

When it comes to potential **up-front payments** some important aspects should be kept in mind. Some buyers provide such payments, which correspond to a share of ex-ante estimates of ERUs multiplied by a negotiated, discounted price. Generally, a maximum of 25% of those emission reductions generated until end of 2012 are taken into account. On one hand, such an up-front payment might enable a project owner to start project implementation by providing the equity needed for leveraging further debt financing. On the other hand it needs to be mentioned that the approach is not equally suitable for all JI project types. It is better applicable for those where ERUs have high impacts on IRR, e.g. waste (methane), N2O or HFC projects. Additionally,

very high risk discounts are normally applied. Furthermore, it is still widely unknown that some banks accept **ERPAs as security for providing debt capital**.

The MULTILATERAL CARBON CREDIT FUND (MMCF)

MMCF, a joint EBRD and EIB climate change initiative, would act as buyer for emission reduction certificates from RUSEFF projects.

Under RUSEFF those projects, which might generate emission reductions of more than 25,000 t CO2 until the end of 2012, can be eligible to benefit from carbon financing. This could either be individual projects, a bundle of smaller projects of the same type, or so-called Programmes of Activities (PoA).

MCCF offers the following **conditions** to project owners:

- Fair prices for carbon credits reflecting market and project risks
- Up to 50% of carbon finance upfront, if there is an objective need
- Hard currency payment (EUR)
- Trustworthy counterparties – participants are investment grade
- In certain cases, an option to acquire post 2012 carbon credits
- Flexible negotiation timeframes to submit PINs and PDDs and negotiate ERPAs

The EBRD – EIB's MCCF is an ideal counterparty for the project owner, adding value and contributing to project quality. Through RUSEFF a combination of carbon finance expertise with expertise in project appraisal and risk mitigation of the two major international financial institutions can be provided to Russian clients.

The EBRD and the European Investment Bank jointly manage the €208.5 million MCCF, which procures carbon credits from Joint Implementation and Clean Development Mechanism projects and also facilitates the development of Green Investment Schemes through a separate Green Fund window with contributions from Ireland and Spain.

General Russian Framework for JI Projects

In order to be successfully registered as a JI project the proposed activities have to fulfil certain eligibility criteria comprising four categories:

(1) Conformity with international regulations of the Kyoto Protocol

(2) Conformity with national procedures for the implementation of emission reduction projects under Article 6 of the Kyoto Protocol

(3) Additionality criteria

(4) Sustainability criteria

Conformity with International Regulations

The general eligibility requirements for the projects implemented under the flexible mechanisms of the Kyoto Protocol are set out in 9/CMP.1, Annex, paragraph 33 as follows:

- The project must be approved by the Parties involved;
- The project would result in a reduction of anthropogenic emissions by sources or an enhancement of anthropogenic removals by sinks that is additional to any that would otherwise occur;
- The project has an appropriate baseline and monitoring plan;
- Project participants have submitted documentation on the analysis of the environmental impacts of the project activity, including trans-boundary impacts, in accordance with procedures as determined by the host Party, and, if those impacts are considered significant by the project participants or the host Party, have undertaken an environmental impact assessment in accordance with procedures as required by the host Party (9/CMP.1, Annex, paragraph 33).

Conformity with National (Russian) Procedures

The Russian legal framework regulating the implementation of JI projects comprises several government decrees and ministerial orders (see Table). The key document is the Government resolution no. 843 of October 28, 2009 "On measures for the implementation of Article 6 of the Kyoto Protocol to the UN Framework Convention on Climate Change".

Document	Date	Name
Government resolution no. 843	Oct 28th, 2009	"On measures for the implementation of Article 6 of the Kyoto Protocol to the UN Framework Convention on Climate Change"
Government decree no. 884-p	June 27th, 2009	"On changes of Government resolution №332 with regard to empowering Sberbank of the Russian Federation to participate in activities targeted at receiving, transfer or purchase of GHG reduction units"
Ministerial order no. 70 (Ministry of Economic Development and Trade)	March 14th, 2008	"On the approval of the list of independent entities"
Ministerial order no. 52 (Ministry of Economic Development and Trade)	Feb 22nd, 2008	"On the approval of the configuration of passports for projects which are being carried out under Article 6 of the Kyoto Protocol to the UN Framework Convention on Climate Change"
Ministerial order no. 21 (Ministry of Economic Development and Trade)	Feb 1st, 2008	"On the approval of the composition of the Commission for the review of applications to confirm projects which shall be carried out under Article 6 of the Kyoto Protocol to the UN Framework Convention on Climate Change"
Ministerial order no. 444 (Ministry of Economic Development and Trade)	December 20th, 2007	"On the approval of the methodological recommendations for review of project documentation"
Ministerial order no. 424 (Ministry of Economic Development and Trade)	November 30th, 2007	"On the Commission for the review of applications to confirm projects which shall be carried out under Article 6 of the Kyoto Protocol to the UN Framework Convention on Climate Change "
Ministerial order no. 422 (Ministry of Economic Development and Trade)	November 30th, 2007	"On the approval of limits for greenhouse gas emission reductions"

The eligibility criteria for JI projects set out by the Russian Federation are principally based on the international regulations, so that the key focus of responsible Russian authorities lies on the conformity of proposed JI projects with national laws in respective sectors.

Additionality Criteria

According to the definition of the BASREC JI Handbook additionality shall be proven by the project participants who should reasonably show that project emissions reductions are additional to what otherwise would have occurred in absence of the project. For this purpose the so-called “Tool for the Demonstration and Assessment

of Additionality" has been developed and introduced by the UNFCCC authorities. According to this tool project participants have to confirm that:

- Identified alternatives to the project activity are consistent with mandatory laws and regulations of the host country
- The proposed JI project activity is unlikely to be the most financially attractive or is unlikely to be financially attractive
- There is at least one barrier preventing the implementation of the proposed project activity without JI financing, and that at least one of identified alternatives to the JI project activity, is not prevented by any of the identified barriers
- No similar activities can be observed, or if similar activities are observed, there are essential distinctions between the proposed JI project activity and similar activities that can reasonably be explained.

Sustainability Criteria

The projects proposed for registration under the Joint Implementation Mechanism have to contribute to sustainable development in the host country. In order to demonstrate that proposed projects fulfil sustainability criteria, project participants have to submit information and documentation on the analysis of the environmental and social impacts of the project activity. Furthermore, project participants have to demonstrate that the project will be viable at least during the determined crediting period under the JI mechanism of the Kyoto Protocol.

Latest Russian JI Developments

The Governmental Resolution 843 defined the roles and functions of the Ministry of Economy and Sberbank as being the two institutions in charge for handling JI-related transactions in Russia. The ministry coordinates all activities and controls the political process. Sberbank manages all operational activities and acts as a kind of service provider to the ministry. The ministry takes the final decision about project approval.

Together, Resolution 843 and Ministerial Order 485 regulate all issues of implementing JI projects in Russia according to Article 6 of the Kyoto Protocol, namely project assessment and approval as well as disbursement of emission reduction certificates. The following table shows responsibilities in detail:

Ministry for Economic Development	Focal Point	• Approval of JI projects • Approval of disbursement of ERUs from JI projects
Sberbank	Operator of certificates	• Organisation and execution of tenders for Russian JI projects • Control and evaluation of submitted project documents • Proposal of projects for approval • Approval of Emission Reduction Purchase Agreements (ERPAs) • Disbursement of ERUs to buyers • Operation of JI project accounts
Ministry of Natural Resources	Operator of National Registry	• Operation of national emission registry

Project approval is accomplished through a **tendering process** led by Sberbank. The Russian government has reserved 300 million Assigned Amount Units (AAUs) (corresponding to an equal amount of tons of CO2) for backing the implementation of JI projects in the country. However, there is no legal prescription on how many tenders will be held until the end of 2012.

By now (June 2011), two tenders have been conducted by Sberbank. 15 JI projects were approved in July 2010 following the first tender held in the first quarter of 2010 corresponding to 30 million tons of CO2. In January 2011 Russia confirmed the

identity of the 18 JI projects approved in the second tender out of 58 projects seeking for approval. Seven of the 18 projects are energy efficiency schemes, three will cut emissions from the oil and gas sector, three are biomass, two are in waste management and one is a hydropower project. Again, the tender size was limited to 30 million emission reduction certificates.

That leaves options for another 8 tenders, however although announced in February 2011 no third tender has been published by Sberbank by now.

Those 32 Russian JI projects that have been approved will receive emission reduction certificates to their accounts established at Sberbank following constant verifications done by Independent Accredited Entities (AIEs). Respective reports have to be submitted to Sberbank latest by 30th of September following the year of verification. After an assessment of the reports by Sberbank and a "No objection" from the ministry, ERUs will be transferred to the buyer's account.

Track 1 vs. Track 2 / Registration Fees

Russian procedures do not make any difference between JI Track 1 (Fast Track) and Track 2 (Slow Track) projects. However, although Track 1 projects do not require approval from the Joint Implementation Supervisory Committee (JISC), project owners have to pay a registration fee since April 2011 amounting to $20,000 to register large-scale projects and $3,000 to register small-scale projects.

Preferred Projects

Only private and public Russian entities can apply for project approval, foreign project owners are excluded by the Russian procedures. Moreover, "system-relevant" entities and sectors may be preferred (see Table).

In any case, the Russian government expects that carbon revenues must be re-invested in Russia leading to modernization or infrastructure improvement. Only those projects will be approved, which fulfil this basic requirement!

Some system-relevant sectors and companies:	
SECTOR	COMPANY
Transport	• Airport Scheremetjevo • Aeroflot • Russische Eisenbahn (RZD)
Energy	• TGK 1-14 • OGK 1-4
Oil and Gas	• Gazprom • Rosneft • Tatneft
Coal Production	• SUEK • Russky Ugol
Metallurgy	• RUSAL • SEVERSTAL
Chemical Industry	• Eurochem • UralKaliy • SIBUR
Wood Processing Industry	• Ilim Group • Arkhangeslks PPM • Volga PPM

All JI projects submitted for a tender will be grouped in one of the following main categories:

1. Energy
2. Industrial processes
3. Chemical industry
4. Agriculture (including Forestry)
5. Waste Management

For assessing the quality of the projects predominantly economic indicators are used by applying profitability and cost analyses. Indicators comprise:

- Economic and ecologic evaluation of the investment project,
- Assessment of the technical and financial potential of the project owner in view of reaching the intended project results,
- Assessment of the economic and social effects caused by the project.

The **exact criteria for the final ranking of the project proposals** are defined in Article IV of Ministerial Order 485:

	Scale (points)
Criterion of the energetic and ecologic efficiency	1 ….. 5
Criterion of the financial and technical potential	1 ….. 5
Criterion of the economic and social efficiency	0 ….. 3

Scaling results of the three criteria are multiplied. A project, which receives the highest possible score of 75 points, would be ranked highest. The example also demonstrates that even if a project receives high scores for criteria 1 and 2, a score of 0 in criterion 3 would de facto lead to a non-approval of the project! The responsibility for scoring lies with Sberbank.

PoA Structures / New Approaches

Currently, the Russian authorities are discussing again a revision as well as an extension of the national JI procedures.

There might be an option that individual project approval could replace or amend the current tendering procedure. The government is currently defining the rules for setting up “Programmes of Activities (PoAs)” under which small individual activities in certain sectors can be grouped under programmes, which would be managed by Sberbank.