PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: FULL-SIZED PROJECT
THE GEF TRUST FUND

Submission Date: 3 March 2009
Resubmission: January 20, 2010

PART I: PROJECT IDENTIFICATION

GEFSEC PROJECT ID[1]**:** **PROJECT DURATION:** 60 months
GEF AGENCY PROJECT ID: 4241
COUNTRY(IES): Russia
PROJECT TITLE: Mainstreaming biodiversity conservation into Russia's energy sector policies and operations
GEF AGENCY(IES): UNDP
OTHER EXECUTING PARTNER(S): Ministry of Natural Resources and Environment
GEF FOCAL AREA (S)[2]**:** Biodiversity
GEF-4 STRATEGIC PROGRAM(S): SO-2, SP-4 Strengthening policy and regulatory frameworks for mainstreaming biodiversity
NAME OF PARENT PROGRAM/UMBRELLA PROJECT: NA

INDICATIVE CALENDAR*	
Milestones	**Expected Dates mm/dd/yyyy**
Work Program (for FSP)	March 2010
CEO Endorsement/Approval	Dec 2010
Agency Approval Date	Feb 2011
Implementation Start	April 2011
Mid-term Evaluation (if planned)	Sept 2013
Project Closing Date	March 2016

* See guidelines for definition of milestones.

A. PROJECT FRAMEWORK

Project Objective: To mainstream conservation priorities into Russian energy sector development policies and energy production sectors.

Project Components	Type[b]	Expected Outcomes	Expected Outputs	GEF financing[a]		Cofinancing[a]		Total ($)
				($) a	%	($) b	%	c =a + b
1. Enabling policy, legislative and institutional environment.	TA	Ecosystem disturbance (measured by the Ecosystem Integrity Index of the Russian Independent Rating Agency) in ten regions with the heaviest energy development is reduced by at least 5% (5 years after the adoption of regulations and policies) Corporate development plans of leading energy companies are compatible with biodiversity management goals. A 30% increase in corporate investment of oil-and-gas, coal and hydropower companies in biodiversity management will ensure biodiversity safety at sites of energy extraction, pipeline and tanker transportation, hydropower production: (a) reduction of species disturbance at feeding, migration and nesting grounds; (b) reversal of vegetation loss and population declines; (c) maintenance of the ecosystem services and habitat connectivity.	**(i)** Governmental Regulation on biodiversity integration in energy projects adopted, based on the "avoid-reduce-remedy" principles, including identification and mapping[3] of areas where: (a) energy development is to be avoided altogether; (b) energy projects are allowed, but should have mitigation measures to reduce biodiversity impacts; and (c) restoration is needed; **(ii)** EIA policies, regulation and guidance are revised to account for the assessment of biodiversity risks in energy projects; **(iii)** "Methodologies for the assessment of investment projects"[4] amended to account of critical biodiversity. Amended existing and new regulations for oil, gas, coal and hydropower projects to incorporate biodiversity modules (tested in demo sites). **(iv)** Full-cost biodiversity damage assessment and compensation policies for hydropower projects; policies to require restored ecosystems to have maximum proximity to the pre-project conditions in oil, gas, coal and peat extraction; **(v)** Corporate and statistical plans and reports of energy companies amended to show biodiversity impact, tools for presentation of biodiversity	1,000,000	19	4,200,000	81	5,200,000

[1] Project ID number will be assigned initially by GEFSEC.
[2] Select only those focal areas from which GEF financing is requested.
[3] The project will exchange experience with the UNDP/GEF Grasslands project in South Africa: Component 4 (coal mining).
[4] This policy was adopted by the Ministry of Economy in 2000.

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				($) a	%	($) b	%	c =a + b
			information at the stock markets are available.[5]					
2. Oil and gas industry	TA and inv.	Industry practices at three active oil-and-gas sites (Caspian Sea oil and gas fields, the Nenetsk Okrug oil and gas areas, and Southern part of Sakha), and at least 7 major prospective projects are compatible with biodiversity goals, ensuring: (a) wildlife population stability; (b) removal of disturbance at migratory, spawning and feeding grounds of endangered species (e.g. Atlantic Salmon, whales of Arctic seas, and sea-bird; (c) a 5% increase in the share of undisturbed ecosystems in the total area of land allocated for oil-and-gas projects in those districts; and (d) reduction of logging at extraction sites and for pipelines.	**(i)** Compendium of biodiversity solutions for the oil-and gas sector addressing possible biodiversity threats from all types of oil-and-gas operations for relevant districts in Russia, offering case-tailored biodiversity conservation solutions – based on the options assessment developed in the PPG[6]. **(ii)** Biodiversity conservation layer added to "standard" oil-and-gas safety tools: (a) Integrated Risk Assessment Scheme for Mining at Shelf Areas amended with a biodiversity module, including impacts on biodiversity from inland oil-and-gas mining; and (b) technical regulations on reducing impact on biodiversity from oil spills at places of highest likelihood of impact of oil spills on biodiversity[7]. **(iii)** Operations of oil-and-gas companies at <u>three active</u> sites modified and technologies implemented to ensure reduction of biodiversity risks: finalize implementation plan for each site[8]; in-the-field training to trigger the implementation of the solutions; technical assistance for actual implementation of the technologies[9]; implement biodiversity monitoring plan. **(iv)** Design of <u>7 major prospective</u> oil-and-gas projects modified to avoid and/or reduce biodiversity risks: design biodiversity solutions[10] for 7 planned oil-and-gas projects, and ensure that they are integrated into the overall oil-and-gas project documentation and as such adopted for implementation. **(v)** Dissemination of lessons and industry-wide replication activities.	1,900,000	17	9,000,000	83	10,900,000
3. Hydro-power sector	TA and inv.	The operation of existing hydropower stations in three WWF Global 200 Ecoregions (*Sayan*, *Southern part of Sakha* and *Caucasus stations*) and the design of eight newly planned	**(i)** Compendium of biodiversity solutions for the hydropower sector developed and integrated into the "Russia's White Book on Large Dams[12]". **(ii)** Operations of <u>active</u> hydropower	1,900,000	17	9,000,000	83	10,900,000

[5] This output will learn from and exchange lessons with the Mauritania's oil-and-gas project Outcome II.2

[6] In order to ensure appropriate level of sophistication and coverage of all biodiversity impacts in all types of business operations in all possible geographic regions of Russia, time and funding of PPG would not be sufficient to complete the Compendiums in full.

[7] This output will learn from and exchange lessons with a similar output in the Mauritania's oil-and-gas project (Outcome II.3).

[8] For each project site, the PPG will: conduct detailed biodiversity study with particular focus on unique flora and IUCN Red List species; provisionally propose solutions for prevention or maximum mitigation of impact; reach agreement with companies/investors on implementation of technologies; develop monitoring plan.

[9] For all "active" sites in all Outcomes, the focus is on the "reduce" part of the mitigation hierarchy. Specifically, in the Oil-and-Gas Component the focus will (provisionally – to be confirmed by PPG and Compendium activities) be on: limitation of economic activities along pipelines for maintenance of the mosaic landscape; forest conservation programs or native reforestation along pipelines; reducing land take to minimum practicable; improving waste-treatment methods to avoid impact on biodiversity; habitat-maintenance activities, species-focused conservation programs, modifying regimes of transportation of oil by tankers on ice (where appropriate), pipeline re-routing (where feasible), measures to enhance seismic security.

[10] For "prospective" projects in all Outcomes, the focus will be primarily on avoidance, but also on reduction technologies. Thus, in addition to those mentioned for the active projects, in the Oil-and-Gas sector this may imply (provisionally) alternative ground routing of pipelines, maximization of distances of placement of drilling stations and auxiliary equipment from shore, narrowing the design width of the forest strip cut out for access roads and the pipeline; bridge-type placement of pipelines over rivers as opposed to digging; techniques for drill waste handling; using single pipeline by multiple companies to avoid new pipeline constructions, etc.

Project Objective: To mainstream conservation priorities into Russian energy sector development policies and energy production sectors.								
Project Components	**Type**[b]	**Expected Outcomes**	**Expected Outputs**	**GEF financing**[a]		**Cofinancing**[a]		**Total ($)**
				($) a	%	($) b	%	c =a + b
		large (over 10 MWt installed capacity) stations are compatible with biodiversity management objectives, ensuring removal of pressures on and improvement of biodiversity status: (a) 2-times reduction in the size of ecosystems inundated by hydropower reservoirs (from the present 26.5 to 13 ha/every 1 million kWatt-hour of electricity generated[11]); (b) improved migration conditions for mammals and reduced traumatism among them; (c) stabilization of fish populations; and (d) retention of unique black-alder & oak communities.	stations in 3 districts modified and technologies implemented to ensure reduction of biodiversity risks. [*Implementation follows the pattern of output iii, Component 2*][13]. **(iii)** Design of 8 newly expected large hydropower stations amended to avoid and where appropriate reduce biodiversity risks. [*Implementation follows the pattern of output iv, Component 2*][14]. **(iv)** Dissemination of lessons and industry-wide replication activities.					
4. Coal industry	TA and inv.	Operations of large active coal mines (Kuzbass and Sakha) in two WWF Global Ecoregions and the design of at least five newly expected coal mines are compatible with biodiversity management objectives, resulting in: (a) maintenance of the endemic bird populations in buffer areas (for active mines); (b) non-deterioration of water and steppe ecosystems[15] ; and (c) retention of the population stability[16] of the endemic species of flora and fauna immediately adjacent to all prospective coal mines.	**(i)** Compendium of biodiversity solutions for the coal sector developed and adopted for immediate application. **(ii)** Operations of two active coal mines (Kuzbass and Sakha) modified and technologies implemented to ensure reduction of biodiversity risks. [*Implementation follows the pattern of output iii, Component 2*][17] **(iii)** Design of five newly expected coal mines modified to avoid and where appropriate reduce biodiversity risks [*Implementation follows the pattern of output iv, Component 2*] [18] **(iv)** Dissemination of lessons and industry-wide replication activities.	1,900,000	17	9,000,000	83	10,900,000
Project management				500,000	17	2,500,000	83	3,000,000
Total project costs				7,200,000		33,700,000		40,900,000

[a] List the $ by project components. The percentage is the share of GEF and Co-financing respectively of the total amount for the component.
[b] TA = Technical Assistance; STA = Scientific & Technical Analysis.

B. INDICATIVE CO-FINANCING FOR THE PROJECT BY SOURCE and by NAME (in parenthesis) if available, ($)

Sources of Co-financing	Type of Co-financing	Project
Project Government Contribution	Cash/in-kind	3,000,000
Private Sector	Cash	30,500,000
NGO	Cash	200,000

[12] Russia's Dam White Book is a baseline activity, which does not deal specifically with biodiversity impacts (see Section A, paragraph on baseline).
[11] Applicable for 8 newly designed hydropower stations.
[13] For active sites in the Hydropower Component the focus will (provisionally) be on modifying water-reservoir operational regimes in periods critical for biodiversity; species-focused conservation programmes, measures to limit access of poachers in previously inaccessible areas; measure to ensure non-interruption of migration and concentration of migrating mammals and loss due to traumatism (especially at mountainous rivers).
[14] For newly designed sites in the Hydropower Component areas of concern will, in addition to the previous output, include (provisionally) biodiversity-speicific rules for the placement and constructive design of water-reservoirs associated with hydropower stations; choice of non-dam "derivative" hydropower stations where appropriate.
[15] Will be measured by the ecosystem integrity index of Russian Independent Rating Agency.
[16] Quantitative indicators will be confirmed at PPG.
[17] For active coal mines the biodiversity risk reduction solutions (provisionally) will include: limiting the impact adjacent ecosystems (especially water ecosystems), re-designing waste management systems to reduce biodiversity impacts, species conservation and native vegetation maintenance programs. The project will also assist in re-engineering of the current (biodiversity unfriendly) rehabilitation technologies with the purpose to achieve maximum proximity of the site with local ecology. This is further discussed in the baseline paragraphs, Section A.
[18] For the 5 coal mines under design, in addition to solutions from the previous point, special consideration will be given to optimized placement of waste disposal facilities, minimization of land take and vegetation clearance.

Total Co-financing		33,700,000

C. INDICATIVE FINANCING PLAN SUMMARY FOR THE PROJECT ($)

	Previous Project Preparation Amount (a)[19]	Project (b)	Total c = a + b	Agency Fee
GEF financing		7,200,000	7,200,000	720,000
Co-financing		33,700,000	33,700,000	
Total	0	40,900,000	40,900,000	720,000

D. GEF RESOURCES REQUESTED BY AGENCY (IES), FOCAL AREA(S) AND COUNTRY(IES)[1] - NA

PART II: PROJECT JUSTIFICATION

A. STATE THE ISSUE, HOW THE PROJECT SEEKS TO ADDRESS IT, AND THE EXPECTED GLOBAL ENVIRONMENTAL BENEFITS TO BE DELIVERED:

1. With an area of 17,075,200 square kilometers, Russia occupies much of easternmost Europe and northern Asia, stretching from Norway to the Pacific Ocean and from the Black Sea to the Arctic Ocean. Russia straddles eight biomes: polar deserts, arctic and sub-arctic forest tundra, taiga, broad-leaved forests, steppe, semi-arid and arid zones. The country is a repository of globally significant biodiversity hosting 14 Global 200 Ecoregions (9 terrestrial, 3 freshwater and 2 marine), eight in their entirety (Olson & Dinerstein 1998). In terms of species diversity, about 8 % of global vascular plant flora, 7 % of mammal fauna and almost 8 % of bird fauna are represented in Russia. Russia harbors more than 11,000 species of vascular plants, 320 species of mammals, 730 species of birds, 75 species of reptiles, 30 species of amphibians and 270 freshwater fish species. The greater part of Russia's territory is covered with little-disturbed or pristine natural complexes. Russia's vast forests and peat-bog landscapes bind huge amounts of carbon, estimated at 34-35 Gt C (forests only); carbon sequestration in 2004 was estimated at 528.2 mln t CO_2/year[20]. Undisturbed ecosystems constitute 73.7% of the country's territory. Ecosystems harboring relict biota of glacial and interglacial periods and many species that are rare today are particularly widespread in European Russia and eastern Siberia. Increasingly, Russia's areas of global biodiversity (Artctic, Siberia, Far East, Caucasus) are becoming the focus of energy development.

2. Russia's energy sector is the backbone of its economy. It is expanding to support Russia's growing domestic energy demands and export. Internal and external demand for gas defines the projected Russia's investment in this sector, which will reach USD 170-200 billion by 2020. Globally significant undisturbed natural ecosystems in Yamalo-Nenetski Autonomous Region and Russian Arctic Seas, which contain 72% of the country's exploitable gas reserves, are the core of the gas industry plans. The oil and gas extraction will be accompanied by a rise in the gas and oil pipeline construction in the boreal, tundra and Arctic areas of northern and eastern Russia, as well as Caucasus (the "Blue Stream" pipeline, etc.). Russia's current hydropower sector is second after China (46,000 MWt installed capacity). By 2020 it will be strengthened with several more large-scale hydropower stations in the Caucasus and Siberia[21]. Demand for electricity for the 2014 Olympic Games in Sochi will drive the growth of hydropower sector in the Caucasus. Biodiversity-rich river systems in Southern Sakha are awaiting construction of cascades of hydropower stations. Despite the ongoing baseline activities, the current policies and technologies expose Russia's biodiversity to a series of risks emanating from energy industries. These may be grouped as follows:

3. **Threats to marine and freshwater biomes:** (i) Shelf-based oil and gas extraction impacts sea habitats and coastal wetlands through spatial and acoustic disturbances at feeding, migrating, spawning/nesting areas. Oil extraction in Sakhalin, for example, was accompanied by dumping of drill waste into sea, disrupting feeding and migration practices of Gray Whales (*Eschrichtius robustus)*, and causing disturbance at the spawning grounds of Pacific salmon. The Caspian oil fields are penetrating far into the coast generating conflicts with Ramsar sites; (ii) Oil spill: Crude oil losses through emergency and technological spills in wells and pipelines are estimated at 1%. One of the most recent accidents resulted in the death of 30,000 birds in Kerch. In Nenetsk, oil transportation and related pollution risk overlaps with migratory routes of the Atlantic salmon (*Salmo salar*). Particularly high risks to biodiversity are posed by oil exploration in the Arctic regions due to rough ice conditions and inadequate port infrastructure; (iii) Large hydropower stations are inundating floodplain habitats and disrupting fish populations. Currently every 1 million kWatt-hour of electricity generated by large Russian hydropower stations results in inundation of 26.5 hectares of surrounding floodplain habitat.

[19] Include project preparation funds that were previously approved but exclude PPGs that are awaiting for approval.
[20] IV Russian National Communication to UNFCC, 2006. Sequestration data for 2004.
[21] "Russia's hydropower development plan through 2020".

Construction of Bureiskaia hydropower station without taking into account biodiversity concerns[22] would lead to destruction of neighboring oak and black-alder forests, stands of the Korean Cedar Pine (*P. koraiensis*), habitats of globally threatened Hooded Crane (*Grus monacha),* Siberian Musk Deer *(Moschus mosciferus),* Siberian Grouse *(Falcipennis falcipennis),* Asian Black Bear *(Ursus thibetanus*)*,* etc. The construction of Zeiskaia hydropower station on the Zeya resulted in disappearance of the endemic Lenok (*Brachymystax lenok*).

4. **Threats to terrestrial biomes**: (i) Open coal mining changes the composition of flora and fauna communities and the impact is the largest on water ecosystems adjacent to coal mines. Biodiversity richness index of rehabilitated coal-mines is extremely low, as most of the native species disappear or remain in extremely limited populations; (ii) Extraction of terrestrial oil and gas deposits destroys or undermines the resilience of habitats during construction of major facilities and access roads. It is estimated that every dollar invested in oil deposits in the Russian North destroys 3 m^2 of natural ecosystems. A study of the impact of oil exploration on bird populations[23] in Western Siberia concluded that the avifauna at boreal-forest oil explorations sites declines by 12%, and becomes less representative of the Siberian type, as there is an increase in common non-forest bird species; (iii) Oil and gas transportation by pipelines and tankers is accompanied by destruction/logging. It has been shown[24] that 30 years after commissioning, the gas pipelines in Russia's permafrost contribute to 2.6-times decline in forest phytomass and 3.2-times decline in the abundance of small mammal populations, accompanied by a rise in the temperature of peatland permafrost soils and a 2.4-times decline in peatland phytomass production and changes in vegetation coverage.

5. The expected exponential grow of Russia's energy sector means a potential further rise in threats to biodiversity. Whether it materializes depends on whether the baseline course of action is modified to address biodiversity risks. The long-term solution is for Russia to adapt its legislation and policies, so as to include legal requirements for biodiversity consideration by energy market players, and to develop and test technologies to implement these requirements in each industry. The barriers hampering the achievement of this solution are considered in detail below:

6. The current legal and policy environment promotes quick maximization of financial returns in the energy sector, under-estimates biodiversity risks, and excludes any incentives for biodiversity-friendly investment. Currently, the Government of Russia is implementing a series of baseline activities to ensure that the energy sector meets the standards of sustainable development: (i) all regions with heavy energy industry will revise, in the next 10 years, their territorial plans to be aligned with "sustainable development" principles, but are doing so without overlaying ecosystem maps, unable to decide where to avoid energy developments and how and where to reduce their biodiversity impacts; (ii) Environmental Impact Assessment (EIA): in 2008 the government adopted revisions to regulations for industrial projects reinforcing EIA instrument. The established practice is that the EIA for energy projects is conducted after the economic and technical design has been developed, when it is actually late or difficult to modify the project. As projects of this scale are monitored by high level of Russian Government in too many cases the nature of the EIA "forces" it to be lenient to the technical and economic parameters of the project and so to confirm its safety 'in general'; (iii) the "Integrated Risk Assessment Scheme for Mining Projects in Shelf Zones of the Russian Federation" currently under development, addresses issues of human security from the oil industry, and covers certain environmental risks[25], but fails to address risks to biodiversity; (iv) environmental security is mandated by "Methodological recommendations and regulations for the assessment of investment projects", but the only biodiversity risk it addresses is the floodplain inundation impact on ecosystems by large hydropower projects, failing to address the variety of other risks; (v) the federal laws on Environmental Protection, Underground Reaches, Land and Forest Codes obligate oil, gas, coal companies to restore land after resource extraction. However, the policy on post-excavation ecosystem restoration (e.g. for coal projects) operates almost exclusively with two "recultivation" approaches – establishing a water reservoir or monoculture afforestation, which results in species impoverishment and "ecosystem decay". As a result, "restored" ecosystems are unable to support native species. As an example, the Upper Angara coal extraction sites were partly reforested, partly waterlogged, resulting in a substantial increase in the common water-bird or forest species, previously unknown or rare in the forest-steppe; (vi) Energy companies investments in environmental protection, are mostly limited to public campaigns and deal with pollution and health issues and not biodiversity. The statistical, corporate and market report formats required by the Government and Russian Union of Manufacturers and Entrepreneurs from energy enterprises do not permit reporting on "investment in biodiversity conservation". Energy companies have thus no incentive to invest in biodiversity, and even

[22] Implications of this threat are numerious and worth a separate paper. They range from direct consequences such as loss of habitat, to indirect threats such as changes in the river ice cycles, opening accesses for poaching in previously inaccessible pristine areas, micro-climate changes, traumatism among mammals and decline in population of species forced to concentrate in previously inaccessible areas along the river, changes in fish populations brought about by heating of water, etc.

[23] Vartapetov L.G. Environmental and economic assessment of the oil exploration on bird populations and of the effectiveness of protected areas for the conservation of avi-fauna in the Northern part of Western Siberia. (in Russian).

[24] Natalia Sorokina. Anthropogenic changes in Northern Taiga ecosystems in Western Siberia.

[25] 3rd National Report to CBD.

those willing to support ecosystem restoration or support a conservation project in other area (as a biodiversity offset) have difficulty to report on such investment to the Government, and they currently present such expenditure as "charity"; and (v) The present damage compensation policies do not reflect full costs. In line with the current policy, compensation payments from energy developers are "actual payments charged per each individual of a fauna species lost as a result of the project". The logic of the policy obviously misses to account for a large menu of ecosystem goods and services. In terms of policy enforcement hardly has any single project so far correctly recorded all "individuals of a species" killed as a result of the project, it is simply impossible to keep an adequate records. Another missing element is the assessment and compensation for potential incomes from traditional land use that indigenous communities forego due to the development of large scale energy projects.

7. Technology and knowledge. While Russia is undertaking significant efforts to advance its technological levels in its priority fields of economic development, the know-how for biodiversity risk prevention and mitigation in the energy extraction/production and transportation is ecologically inadequate[26]. (i) Currently, hydropower, coal and oil-and-gas industries develop their projects without knowledge of the site biodiversity. As an example, oil developments in the North and East of the country ignore whale and salmon habitats; hydropowers are developed without knowledge of the requirements of fish and floodplain mammals and plants[27]. The majority of the scientific papers and NGO protests on biodiversity risks of energy projects are reactions to threat realization, while at the time when the energy project is being developed biodiversity studies within the overall EIA are either ignored or are too generalistic to ensure biodiversity security. There is an apparent "knowledge decoupling" of energy developers from biodiversity scientists at the stage of project design when risks can best be avoided if they were known; (ii) The scarcity of research-and-development investment by the oil-and-gas industry is causing prolonged industry dependence on obsolete technologies. The investors are too short of working capital to invest in biodiversity friendly solutions, perceiving it as a burden on their income statement, not as an opportunity to increase stock price and ensure longer-term financial solvency (which is to a large extent a consequence of the discouraging policies discussed above). Even foreign companies entering the Russian market often perceive Russian public as "ecological ignorant" attempting to enforce less expensive and more risky technologies or trying to avoid placing a technology compliant with biodiversity security (e.g. attempts of a group of companies including Exxon Mobile and Shell to avoid underground piping of drill waste in Sakhalin, which is otherwise a standard Best Available Technology used in Alaska, North Sea and similar environments elsewhere in the world). When old technologies of local developers or lack of appropriate technologies from foreign companies determine investments, for example in the Arctic sea-shelf and coastal areas, Eastern Siberia, Caucasus or other biodiversity hot-spots - they immediately cause resistence from local authorities and NGOs demonstrating their environmental and social unacceptance[28]. Such status-quo of investors promoting projects with obsolete technologies is unsustainable, and technologies have to change. As one of the most relevant examples, the current Arctic oil and gas extraction and transportation projects often miss to incorporate the know-how for drilling and physical infrastructure adapted for permafrost (for now as well as for the future when climate change may trigger permafrost melt). This relatively new (globally) area of research has basic importance for the northern gas and oil energy projects in Russia and for the ecosystems it may impact, as inappropriate technologies (e.g. too much land clearance, inadequate choice of construction materials) might result in habitat infringement and species composition changes in globally important Arctic species and in climate-caused infrastructure breakdowns and spill accidents.

8. To remove these barriers, the project proposes four components: Component 1. Enabling legislative and policy environment: a set of policies will be put in place covering: (i) introduction of the "avoid-reduce-remedy" paradigm into the process of energy project planning; (ii) assessment of biodiversity risks in energy investment projects; (iii) full-cost biodiversity valuation and compensation policies; (iv) amendments to statistical, corporate and stock-market reporting requirements to incorporate biodiversity information; and (v) amendments to land use regulations on land clearance/logging norms for energy development; amendments to energy infrastructure construction requirements. Project interventions in each sector (Components 2-4) will include demonstration activities at active sites and interventions at the design stage of newly expected projects in order to lead to actual implementation of most promising biodiversity friendly technologies. The set of demonstration activities is an attempt to break, through real-life experience, the "aversion attitude" of the investors towards biodiversity technology adoption and prove that timely application of biodiversity

[26] The "ecological inadequacy" means that during and after energy projects, species and ecosystem changes are such that the new biodiversity equilibrium is poorer in the abundance and composition of species and the whole ecosystem itself is extremely unstable (e.g. the coal rehabilitation consequences discussed in the risks section).
[27] Which leads to risks discussed a few paragraphs above.
[28] There is evidence of this from WWF, Greenpeace, and numerous local NGOs (e.g. protests against the influence of proposed Sakhalin oil fields on whales, as mentioned in the risks section above).

technologies can positively influence stock prices and should in the long run over-weigh the cost of non-implementation or use of obsolete technologies (fines, costs of public litigation, clean-up and rehabilitation). At the PPG stage biodiversity surveys will be conducted at each project site, biodiversity technologies discussed and agreement with energy companies reached. Implementation will, however, proceed only after each industry compendiums are finalized at the full-size stage. This will enable refinement project site implementation plans and serve to increase success chances of technology testing. The project will use the guidance and build upon the global practices and experience developed by IUCN, CI, International Council for Mining and Metals (ICMM) and other agencies on mainstreaming biodiversity into energy sectors, and will adapt them to Russian market conditions. Examples of the global guidelines to be used include: (i) ICMM's Good Practice Guidance for Mining and Biodiversity, which was officially launched at Conservation International's Global Symposium 2006 - practical guide for use by mining companies at all stages of their operations, from initial exploration to mine-closure planning and implementation; (ii) the guidebook "Integrating Biodiversity Conservation into Oil and Gas Development" - practical guide for building biodiversity protection into the entire spectrum of oil and gas operations, from exploration to decommissioning developed by CI's Energy and Biodiversity Initiative 9now closed). Component 2. Oil-and-gas industry. This component will support: (i) a compendium of biodiversity solutions for the oil-and gas sector: addressing all possible biodiversity threats from all types of oil-and-gas operations for all oil-and-gas districts in Russia and, offering case-tailored biodiversity conservation solutions/technologies, (ii) amend the Integrated Risk Assessment Scheme for Mining at Shelf Areas with a biodiversity module; (iii) support testing of most promising risk reduction technologies at Caspian Sea, Nenetsk Okrug oil fields and in Souther part of Sakha Republic; and (iv) introduce risk avoidance/reduction/remedy technologies for at least seven major prospective oil-and-gas projects. Component 3. Hydropower sector: will support: (i) development of a compendium of biodiversity solutions for hydropower sector; (ii) technology testing in the Caucasus, and Southern part of Sakha; and (iii) development of solutions for biodiversity risk avoidance and reduction for prevention and mitigation for at least eight future hydropower projects. Component 4. Coal industry. Similarly to the two previous outcomes, the project will support: (i) a biodiversity solutions compendium for the coal sector in Russia; (ii) implementation of biodiversity solutions at two active coal mines; and (iii) amending the design of the five planned coal mining projects to ensure they are compatible with biodiversity objectives.

9. The global biodiversity benefits of the project are expressed through safeguarding long-term ecological stability of the Arctic, Tundra, and Boreal Forest biomes, as well as of the fragile ecosystems of the Caucasus and Far East regions. Mainstreaming biodiversity into energy at project sites alone will ensure population stability of a number of IUNC Red List species, including: Hooded Crane (*Grus monacha),* Siberian Musk Deer *(Moschus mosciferus),* Siberian Grouse *(Falcipennis falcipennis),* European Otter *(Lutra lutra)*. Project demonstration in Nenetsk Okrug will secure stability for the Atlantic salmon (*Salmo salar*). The indicative pilot regions are presented in the table below:

Region	Type of energy development	Valuable ecosystems/biodiversity
Arctic: Nenetsk AO	New oil explorations, oil terminals	Pechora Sea, coastal tundra. East-most habitat of migratory Atlantic salmon.
Caucasus: Krasnodar Krai, Dagestan Republic	Oil extraction and processing, oil/gas transit, small/mountain hydropower plants	WWF Global 200: Wetlands of Lower Kuban river, Terek estuary, mountain ecosystems of Westerns and Easterns Caucuses, xeromorphous forests and alpine grasslands.. Steppes, subtropical, broadleaved and coniferous forests, alpine grasslands and nival belt. Caspian ecosystems - endemic fauna and unique sturgeon population.
Eastern Siberian Taiga: South of Yakutia (Sakha Republic)	Northern hydropower plants, open coal mining, oil pipeline	WWF Global 200 Ecoregion: Arctic tundra-steppes in lake-beds.. Extremely resilient andglobally valuable pinaceous and larch forests.
Sayany: Khakassia, Kemerovo oblast	The largest hydropower plant (Khakassia), major coal region with open and deep mining	WWF Global 200: Northern steppes in intermountain basins, Mountain Shoria, large boreal forest stands. One of Russia's biodiversity centres located in the juncture of south taiga and mountain-steppe zones.

B. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH NATIONAL/REGIONAL PRIORITIES/PLANS:

10. The Government is reinforcing the environmental sustainability of its energy sector, and the Presidential Order 889 dated 4 June 2008 "On measures to increase energy and environmental effectiveness of Russian economy" defines a direct link between environment protection objectives and energy industries. Russia's National Biodiversity Strategy and Action Plan recognizes that the key threat to its biodiversity is "destruction and disturbance of habitat"[29]. The scale of biodiversity priorities to be tackled under the NBSAP places "oil and gas extraction and transport, exploratory drilling for oil and gas in coastal areas and on shelf" as one of the key concerns in the Russian Arctic, for which it claims "Russia bears global responsibility". In the NBSAP, "inappropriate allocation of forest stands for mining, building of roads, other

[29] https://www.cbd.int/doc/world/ru/ru-nbsap-01-p4-en.pdf

linear structures, and degradation of forest stands under the influence of discharges from smelters and power stations" are among top five key problems in forest ecosystems. The hierarchy of priorities for marine and coastal ecosystems starts with need to deal with "(i) pollution by hydrocarbons and drilling fluids, (ii) inappropriate engineering works and mining activities in the coastal zone"; for freshwater ecosystems areas of priority for biodiversity are (i) hydroengineering works; and (ii) pollution as a result of oil development. Finally, for peatland ecosystems, NBSAP puts first priority on the need to deal with "changes in the natural hydrological conditions as a result of construction of roads, oil and gap pipelines, hydrotechnical works". NBSAP makes clear the need to mainstream biodiversity into energy sectors at all stages of energy cycles.

C. DESCRIBE THE CONSISTENCY OF THE PROJECT WITH GEF STRATEGIES AND STRATEGIC PROGRAMS:

11. The project will contribute to the GEF Strategic Objective 2 "To Mainstream Biodiversity in Production Landscapes/Seascapes and Sectors", Strategic Programme 4 "Strengthening the Policy and Regulatory Framework for Mainstreaming Biodiversity". In doing so the project will target Russia's energy sector, which represents top priority for national government and Russian economy. The project puts in place legal, policy and technological measures to mainstream biodiversity in Russia's energy sector, and is well-aligned with BD SP-4. Component I introduces full-cost biodiversity valuation and damage compensation policies into energy investment design and amends energy infrastructure construction norms. In order to build positive capacities and experience, the subsequent Components (II – IV) deal with capacity building and technology testing in oil-and-gas, hydropower, and coal industries, enabling energy market operators to adequately use the incentives and implement policies developed in Component I.

D. JUSTIFY THE TYPE OF FINANCING SUPPORT PROVIDED WITH THE GEF RESOURCES:

12. The nature of the project is policy development, capacity building and technology testing. The project objective will be attained through technical assistance and investment in demonstration activities. No loan or revolving-fund mechanisms are considered appropriate, and therefore grant-type funding is considered most adequate to enable successful delivery of the project outcomes.

E. OUTLINE THE COORDINATION WITH OTHER RELATED INITIATIVES:

13. There is a number of on-going initiatives at the national and regional levels, NGOs and UNDP programmes that will complement and build synergies with the proposed GEF project. The project will built upon WWF-led ecosystem GAP analysis and UNDP/GEF on-going biodiversity (protected areas) projects for practical successful conservation solutions and pilots in Russian regions. Several specific UNDP initiatives in Russia will have direct relevance to the proposed project: (i) A joint project of a Russian hydropower generating company RusHydro and a coalition of Russian Environmental NGOs "White paper: Dams and development" looks at adopting and expanding and international guidance for sustainable hydropower development in Russia (following a guide of the International Commission of Large Dams). UNDP has joint this process and will contribute above all through analysis of impacts of hydrological regimes on the biodiversity of the Lower Volga region (in the framework of UNDP/GEF Lower Volga project); (ii) UNDP/GEF regional Caspian environmental programme (CASPECO) provides a platform and lessons for interacting with energy companies on energy issues in the Caspian Sea; (iii) UNDP is supporting development of corporate social and environmental responsibility of Russian companies through the Global Compact-Russia project that includes promotion of companies non-financing reporting and encourages investments into environmentally responsible behavior; (iv) UNDP Russia has launched a new knowledge exchange platform "Solution Exchange" that offers space for development professionals in the field of Energy and Environment (sustainable energy) to communicate, exchange knowledge and solutions, jointly work on policy documents. This UNDP sponsored network will provide a venue for lessons learning, dissemination and up-scaling GEF project solutions for biodiversity-friendly energy development. In addition, the project is aligned with and will benefit from the work undertaken by UNDP, through its Oslo Governance Center on "Governance of non-renewable natural resources for sustainable development" which aims to produce global documentation of policy guidelines and technical tools on using non-renewable natural resource revenue for equitable social service delivery, local human development and environmental management and to enhance the knowledge management and the global partnership with the private sector.

F. DISCUSS THE VALUE-ADDED OF GEF INVOLVEMENT IN THE PROJECT DEMONSTRATED THROUGH INCREMENTAL REASONING :

14. The project builds on the baseline activities which address human security and other aspects of sustainable development, by adding a layer of biodiversity conservation. GEF funding will be drawn upon to enhance environmental standards and enforcement, where needed to protect biodiversity in ecologically sensitive areas. The project represents the first GEF intervention of this type in Russia addressing biodiversity mainstreaming into the key priority development

sector – fuel and energy. Without the project, the design of oil-and-gas, coal and hydropower investments in Russia in 2012 ignores biodiversity risks; the scale of investment in biodiversity-mainstreaming solutions by energy companies remains low; the 'recultivation' philosophy of energy companies prevails over the 'pre-emption' thinking. The newly designed hydropower stations will reduce the diversity of floodplain and canyon flora, populations of fishes and large mammals; the impoverishment of the local flora and important bird populations remains a usual by-product of coal sector operations; oil-and-gas developments continue to overlap with rare fish migration routes, whale habitats. By 2012 the growing energy sector in Russia is very likely to reduce the area of undisturbed ecosystems by further 5%. In the alternative scenario, policies developed in Component I are likely to ensure, by 2012, a 30% increase of investment of energy operators in biodiversity-solutions and their incorporation in regular sector practices; in regions with heavy energy concentration the project is likely to achieve a 5% increase in the share of land without ecosystem disturbance; technologies tested in Components II-IV will ensure that ecosystems adjacent to coal, oil-and-gas and hydropower sites are retained in their natural state with maximum proximity, retaining non-interruption of the habitats of internationally important mammals and plants. The project will finance the incremental costs of biodiversity management, in particular the one time costs of building management capacity and adaptive learning in the extractive industries sectors and will not defray costs that should be born by the industry. Overall, in terms of biodiversity impact, the added value of the project's technical assistance and investment will be reflected in "reversing" the ecosystem degradation in a number of WWF 200 Global Ecoregions in the Arctic, Siberia, Caucasus, Far East, and seascapes in Russia.

G. INDICATE RISKS, INCLUDING CLIMATE CHANGE RISKS, THAT MIGHT PREVENT THE PROJECT OBJECTIVE(S) FROM BEING ACHIEVED, AND IF POSSIBLE INCLUDING RISK MITIGATION MEASURES THAT WILL BE TAKEN:

Risk description	Risk rate	Mitigation
Difficult governance context in the energy sector	L	This project is one of the responses to the Presidential Order 889 dated 4 June 2008 "On measures to increase energy and environmental effectiveness of Russian economy". It is based on the recognition that of all environmental aspects in the energy sector, biodiversity has been least considered so far, thus it is "the most demanded" type of work. In line with this, the MNRE places an exceptionally high significance to the project, and is committed to ensure maximum success to all planned initiatives, at policy and at site demonstration levels. A high level Steering Committee will be formed already at the PPG stage to ensure project acceptance by all branches of power at all levels.
Resistance of energy companies to new policies	M/L	Regular working meetings and round tables, organized in partnership with the Russian Union of Manufacturers and Entrepreneurs and Russia's Global Compact Network will enable exchange of opinion and feedback from the energy sector operators at each stage of policy development. The win-win character of biodiversity solutions, reputation risk minimization and long-term economic viability of policies and biodiversity solutions induced from the policies will be key to ensuring the acceptance of the energy companies.
Lack of coordination among ministries	M	The project's steering committee will include representatives of key ministries; will serve the bi-annual forum for checking progress and coordination of positions. The project will be integrated into existing government inter-agency bodies/committees.
Lack of expertise and capacities limit the success of project solution-testing	L	UNDP Russia successfully operates substantial portfolios of projects both in energy and biodiversity sectors, and has clear procedures and expert data-bases enabling efficient enlisting of most talented national and international expertise for its projects.
Climate change risks: risk of permafrost melt; vegetation zone lines changes as a result of climate change.	L	The best-practice compendiums for each sector (Components II-IV, first ouputs) will be developed by cross-sectoral expert groups, including specialists on vegetation and permafrost changes caused by climate change; such changes will be duly accounted when developing biodiversity solutions in each sector. Further, a special "pefmafrost study" will be carried out as part of the adaptation of construction norms (an output in Component I).

H. DESCRIBE, IF POSSIBLE, THE EXPECTED COST-EFFECTIVENESS OF THE PROJECT:

15. The projects strategy is to develop a policy environment enabling technology change, followed by actual elaboration and testing of technological solutions. The only alternative to this is continued reliance on obsolete technologies and land recultivation. Although this may seem cheaper, prevention and early warning has, in the international energy markets, proved to be financially more solvent in the long run – consider the cost of rehabilitation and court litigation of the Exxon Valdez after the famous oil spills, and all the investment in preventing measures in the US after. The Russian society and NGO sector is becoming ever more biodiversity-vigilant, and continued reliance on obsolete technologies (meaning continued high threat to biodiversity) hardly remains a winning strategy, as it already translates into high rehabilitation and litigation costs for Russian energy operators. The cost of recultivating mined lands

in boreal and tundra areas can be as high as USD 70,000/ha. Rehabilitating 100,000 ha of degraded land alone means a one-off investment of USD 7 million for just one company, not to mention the cost of lost reputation, project delays and court litigation and the negative impact on the stock-price. In fact it is now becoming riskier for energy businesses in Russia to do nothing on biodiversity than to invest in its conservation. Now is the right time in the Russian economic development when the GEF, with an investment comparable to one-time rehabilitation of a 100,000 extracted coal mine, could, through policy change and demonstrations, help to overcome the aversion of local energy market investors and prove positive effect on company reputation and stock prices and cost-savings in the long term. In addition to the good practice guidance available globally, this additional intervention is needed to develop the capacity in Russia to avoid and mitigate the impacts of extractive industries on biodiversity, as well as to develop knowledge through an adaptive learning approach. The results of the interventions at the pilot sites will be judged against control areas where no action is taken. A more detailed cost-effectiveness argument will be developed during project preparation.

I. JUSTIFY THE COMPARATIVE ADVANTAGE OF GEF AGENCY:

16. In line with UNDP's comparative advantages within GEF, the project will focus on enabling regulatory environment, technical assistance and capacity building. In implementing this project UNDP will specifically build upon (i) profound experience, presence and networks in the regions of the Russian Federation (provinces) acquired through implementation of its GEF – funded biodiversity and CC portfolio, (ii) partnerships with leading corporate sector and UNDP Russia's role as a facilitator of the Russian Network of the UN Global Compact; (iii) UNDP's experience in implementing 32 GEF – funded projects in biodiversity conservation in the region through its network of 26 Country Offices. UNDP-GEF is supporting efforts to mainstream biodiversity in production systems through biodiversity projects covering an area of 54,952,198 hectares in terms of demonstration activities, and indirectly, through reform of policies, strategies and institutional structures, an area of 115,309,990 hectares. Under mainstreaming, UNDP-GEF activities aim to modify production methods by piloting and adapting production measures that satisfy both development and conservation fundamentals, or that do so at acceptable levels of tradeoff; (iv) lessons from GEF regional environmental programmes in the Black Sea and Caspian Sea led by UNDP; (v) the work on strengthening governance for extractive industries undertaken by UNDP's Oslo Governance Centre; and (vi) the UNDP Country Programme in the Russian Federation (2008-2010) which outlines biodiversity conservation among key priorities, and has over 10 years of experience in supporting technical assistance and investment biodiversity projects, both GEF and other donor-funded.

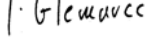
PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):
(Please attach the country endorsement letter(s) or regional endorsement letter(s) with this template).

NAME	POSITION	MINISTRY	DATE *(Month, day, year)*
Igor I. Maydanov	Director of International Cooperation Department	Ministry of natural resources and environment of the RF	6 February 2009

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies and procedures and meets the GEF criteria for project identification and preparation.

Agency Coordinator, Agency name	Signature	Date *(Month, day, year)*	Project Contact Person	Telephone	Email Address
Yannick Glemarec UNDP/GEF Executive Coordinator		January 20, 2010	Adriana Dinu	+421 905 428 238	Adriana.dinu@undp.org