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SECTION A. Project Title

16.00 MW RESADIYE-I Hydro Electric Power Plant Project.
Date: 27/08/2012
Version:10

SECTION B. Project Description

Resadiye-I is a 'Run-off-River' type Hydroelectric Power Plant (HEPP) Project located on Kelkit River of Turkey and within the boundaries of Koyulhisar District of Sivas Province. The purpose of the Project is to generate electric energy from the running waters of Kelkit River. Original project design developed by State Hydraulic Works Authority (DSI) comprising single power plant which has later been divided into three individual projects and named as Resadiye-I, Resadiye-II and Resadiye-III respectively.

The Resadiye-1 Weir and HEPP project consists of a conveyance channel, energy tunnel, forebay, penstock and powerhouse. Location of the project is selected to utilize the hydraulic potential of tail water of Koyulhisar HEPP which is diverted to the conveyance channel through ÇAYLI weir. Total length of the conveyance channel is 10.25 km whereas design flow rate of the project is about 55.00 m³/s and elevation difference is about 37.0m.

Resadiye-I HEPP will have a total installed capacity of 16.0 MW with an expected electricity generation of about 115 GWh per annum. Corresponding emission reduction is about 64,630 tCO₂ per year. Compared with a natural gas power plant, the Project will replace consumption of about 27 million m³ of natural gas and save about 12 million US Dollar foreign currency per year.









Figure 1. Resadiye-I HEPP Project Area



Figure 2. Reşadiye-I HEPP Project site

SECTION C. Proof of Project Eligibility

C.1. Scale of the Project

Project Type	Large	Small
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
	<input checked="" type="checkbox"/>	<input type="checkbox"/>
	<input type="checkbox"/>	<input type="checkbox"/>
		<input type="checkbox"/>

C.2. Host Country

Host country Turkey does not have cap on GHG emissions.

C.3. Project Type

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	<input checked="" type="checkbox"/>	<input type="checkbox"/>
Does your project activity classify as an End-use Energy Efficiency Improvement project?	<input type="checkbox"/>	<input checked="" type="checkbox"/>

Project activity involves construction of a 16.0 MW capacity run-off-river type hydroelectric power plant for electricity generation. Project category is included in the sectoral scope 1 “Energy Industry – Renewable Sources” according to the UNFCCC definition.

Pre Announcement	Yes	No
Was your project previously announced?	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Carbon credit has been taken into account by project investors in making the project decision to proceed. Carbon income was also taken into account by the financier banks as an integral part of their decision to provide loans to fund the project.		

C.4. Greenhouse Gas

Greenhouse Gas	
Carbon dioxide	<input checked="" type="checkbox"/>
Methane	<input type="checkbox"/>
Nitrous oxide	<input type="checkbox"/>

C.5. Project Registration Type

Project Registration Type	
Regular	■

Pre-feasibility assessment	Retro-active projects (T.2.5.1)	Preliminary evaluation (T.2.5.2)	Rejected UNFCCC (T.2.5.3) by
	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

SECTION D. Unique Project Identification

D.1. GPS - Coordinates of Project Location

	Coordinates
Latitude (Weir/Powerhouse)	N 40° 18' / N 40° 19' 28"
Longitude (Weir/Powerhouse)	E 37° 44' 51" / E 37° 37' 23"



Resadiye-I HEPP Project is situated in Koyulhisar district of Sivas province. The Project is located on Kelkit River and close to Ortaseki, Cayli, Sarikaya and Sugoza villages.

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D.2. Map



Figure 3. Resadiye-I HEPP Project Location

SECTION E. Outcome Stakeholder Consultation Process

E.1. Assessment of Stakeholder Comments

Initial stakeholders' consultation meeting has been organised and held on February 4th, 2009 in Koyulhisar District of Sivas Province. In general stakeholders' comments were positive about the Project. Some negative scores given by stakeholders have been assessed in LSC report and will be further discussed during feedback round which will be organised after receiving Gold Standard's comments about local stakeholder consultation.

Three main issues raised by the participants during the SC meeting were:

- Impact of project on biodiversity,
- Precautions to be taken around conveyance channel to prevent any accident, and
- Consideration of earthquake risk within project design.

Stakeholder Comments	Assessment	Response to comment
Impact on wildlife	Taken into account	All necessary precautions will be taken
Risk of accident around conveyance channel	Taken into account	There will be precautions to prevent accidents, these will reviewed and increased if necessary
Risk of landslide/Earthquake	Taken into account	Although necessary structural analyses against earthquake and landslide have been made previously, project design will again be reviewed considering previous natural disasters in the region.

All comments from stakeholders are taken into account and promptly responded.

E.2. Stakeholder Feedback Round

Since there exist no significant issue to be monitored during the Local Stakeholder Consultation(LSC) meeting, Feedback round has not been organized as a physical meeting. Instead, summary of PDD including LSC meeting notes, cover letter and SD matrix have been sent by to all stakeholders identified and those who have participated the meeting either by mail or through hand delivery. Also a set of all documents have been made available to stakeholders in Koyulhisar Municipality. PDD and other project documents have been published in GTE and GS websites during feedback period and GS supporter NGOs and local expert have been informed by email about the consultation process and project. PDD has also been published in SGS(DOE) website.

The feedback period has ended in 19/10/2009 and about 10 SD forms have been returned by fax, mail and through hand delivery to project site. Copies of these forms have been submitted to DOE during validation.

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Indicator	Mitigation measure	Chosen parameter and explanation	Score given by stakeholders		
			+	-	0
Air quality		SOx and NOx emission	2	0	8
Water quality and quantity		Amount of water available for irrigation	1	2	7
Soil condition		Soil Pollution and/or Erosion	2	0	8
Other pollutants		Noise	1	0	9
Biodiversity		Impact on protected species	0	3	7
Quality of employment		Job Safety and Working Conditions	6	1	7
Livelihood of the poor		Impact on living conditions	8	0	2
Access to affordable and clean energy services		Impact on Reliable energy services	10	0	0
Human and institutional capacity		Number of certificates issued/trainings provided	8	0	2
Quantitative employment and income generation		Number of locally recruited staff in the power plant.	10	0	0
Balance of payments and investment		Fossil fuel import avoided	9	1	0
Technology transfer and technological self-reliance		Expenditures for equipments.	9	1	0

The negative scores for indicators biodiversity and water quantity and quality have been attributed to the decrease of water in the diverted section and to the trees cut during construction of channel. In order to prevent any negative effect of the project with regard to decrease of water, a continuous minimum flow from the weir has been guaranteed which will be monitored by DSI. Also, according to feasibility report, even at maximum load, annual water use by the plant will be about 77.4% of the average annual flow. Considering that turbines will not be operated when the water flow is below a certain value (about 35-40% of design flow rate), no negative impact is expected in the diverted section.

In order to mitigate with negative impact of trees cut during channel construction and in order to prevent risk of falling of trees into the channel, project owner has made payment to forestation fund operated by Regional Directorate of Forestry for reforestation of the site and renovation of existing forest lands. The area around the channel will be replanted and renovated by Directorate of Forestry such that a more regular and healthy forest site will be created.

Other negative scores couldn't be assessed since there exist no explanation. Negative scoring for Balance of payments can be attributed to the import of turbines but there exist no domestic alternative and compared to avoided import of fossil fuel, project will provide significant gain in medium and long term.

SECTION F. Outcome Sustainability Assessment

F.1. 'Do no harm' Assessment

Project activities have been analyzed against questions in table 2.6 and in annex H of GS toolkit. Project is not complicit in corruption and fully respects human rights. Also, there exist no identified species under protection in the project area that will be affected negatively by the Project.

Project is a run-off-river type hydroelectric project and does not involve use or generation of any hazardous waste. All of the project activity is implemented considering related environmental and safety precautions. Based on the analysis, only relevant areas related to project activity are determined as labour standards and environmental protection which are assessed as given in table below.

Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
Human Rights			
1 The Project respects internationally proclaimed human rights including dignity, cultural property and uniqueness of indigenous people. The Project is not complicity in Human Rights abuses.	Project activities are not expected to cause any human rights abuse. Turkey has ratified European Convention on Human Right in 10/03/19541.	Low	No mitigation measure is required for this indicator.
2 The Project does not involve and is not complicit in involuntary resettlement.	Project does not involve any resettlement. ²	Low	No mitigation measure is required for this indicator.
3 The Project does not involve and is not complicity in the alteration, damage or removal of any critical cultural heritage.	There exists no cultural heritage within the project site as given in EIA report(page 48).	Low	No mitigation measure is required for this indicator.
Labour Standards			
4 The Project respects the employees' freedom of association and their right to collective bargaining and is	. Turkey has ratified ILO 87 and 98 conventions .All staff recruited	Low	N/A

¹ <http://www.istanbul.gov.tr/?pid=9218> (Accessed on 31/08/2009)

² EIA Report, page 48

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Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
not complicit in restrictions of these freedoms and rights	are employed according to the national legislations. ³		
5 The Project does not involve and is not complicit in any form of forced or compulsory labour.	Turkey has ratified ILO convention 29 and 105 on forced and compulsory labour ³ .	Low	N/A
6 The Project does not employ and is not complicit in any form of child labour.	Turkey is a party of IPEC* since 1992 and ratified ILO convention 138 and 182 ³	Low	N/A
7 The Project does not involve and is not complicit in any form of discrimination based on gender,	Turkey is a party of IPEC* since 1992 and ratified ILO convention 138 and 182.	Low	N/A
8 The Project provides workers with a safe and healthy work environment and is not complicit in exposing workers to unsafe or unhealthy work environments	Turkey has ratified ILO convention 155 about work safety and precautions. ³ Project will be implemented in compliance with national regulations including the Regulation on Labourer Health and Labour Safety (EIA page 163)	Low	All labours are trained in terms of work safety and relevant safety protocols. An emergency plan is issued and in force for risk of accident.
Environmental Protection			
9 The Project takes a precautionary approach in regard to environmental challenges and is not complicity in practices contrary to the precautionary principle. This principle can be defined as: "When an activity raises threats of harm	Earthquake can cause leakage in the channel and flooding. All the domestic (i.e.; waste water	Low	The original project design has been revised to minimize the impact of earthquake.

³ <http://www.ilo.org/public/turkish/region/eurpro/ankara/sozlesme/onaylanan.htm>

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Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
<p>to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically.”</p>	<p>from construction site), excavation aggregates and hazardous waste (i.e. Accumulators, waste oil) will be handled according to the national legislations such as in compliance with the provisions of 18.03.2004 dated and 25406 numbered "Regulation on Control of Excavation Soil, Construction and Debris Wastes (EIA pages 26, 156). Project will be implemented in compliance with other relevant national regulations including the Provisions of "Regulation on the Assessment and Management of Environmental Noise" which became effective upon being published in 01/07/2005 dated Official Gazette shall be complied</p>	<p>Low</p>	<p>Although there exist no settlement near the project site, to minimize the risk of any accident around conveyance channel, fences will be built around the channel and overpasses will be constructed to enable safe access to other side of the channel.</p>

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Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
	with within the scope of the project. (EIA page 162)		
10 The Project does not involve and is not complicity in significant conversion or degradation of critical natural habitats, including those that are (a) legally protected, (b) officially proposed for protection, (c) identified by authoritative sources for their high conservation value or (d) recognized as protected by traditional local communities	There exist no protected (or proposed to be protected) or critical habitat within the project boundary as stated in EIA report. Some trees will be cut during construction which will be compensated through plantation after construction is completed.	Low	Company will make payment to Province Directorate of Forestry. This payment will be used to plant new trees and renovate other forest areas. The evidence for compensation will be provided to DOE during validation.
Anti-Corruption	Turkey has ratified several conventions on bribery and corruption including OECD and UN conventions ⁴ .	Low	No mitigation measure is required for this indicator.
*International Programme on the Elimination of Child labour.			

⁴ <http://www.masak.gov.tr/en/LaunderingProceedsofCrime/Chronology.htm>

F.2. Sustainable Development matrix

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
*Air quality	Mitigation measure is not required for this indicator	7.A -Integrate the principles of sustainable development into country policies and programmes and reverse the loss of environmental resources) 7.B -7.2 CO ₂ emissions, total, per capita)	Parameter :SO ₂ and NOx emission Emissions of SO ₂ and NOx will be reduced in parallel to CO ₂ due to avoiding fossil fuel combustion.	+
*Water quality and quantity	Ensuring that minimum flow will be released from the weir to protect aquatic life in the river bed.	-	Parameter: Amount of water released. Quality of water will not be affected by the project activity. Quantity of water released will be monitored continuously by DSI (State Hydraulics Work Authority) to ensure that minimum flow is achieved.	0
Soil condition	Risk of erosion is considered in project	-	Parameter: Soil erosion, sediment	0

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Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
	design. Sediment passage will be built to enable sediment transport. Excavation aggregates will be used in construction and stored in allowed locations)if any).		accumulation and excavation aggregates.	
Other pollutants	Disposal of wastes appropriately and in compliance with regulations.	-	Parameter: Solid and liquid wastes, noise and dust	0
*Biodiversity	Compensation payment made for plantation of new trees.	-	Parameter: Number of affected trees. Some plants will be affected during construction which will be replanted after construction is completed.	0
Quality of employment	Staff will be trained for the	-	Parameter: Number of	0

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Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
	positions created during construction & operation phases. All Health and Safety measurements will be applied according to local regulations.		certificates issued/trainings provided.	
Livelihood of the poor	No mitigation action is required since local people will naturally have priority in recruitment process due to logistic purposes also. Overpasses and fences will be built to enable safe access of locals to other side of the channel.	MDG target 1.A (Halve, between 1990 and 2015, the proportion of people whose income is less than one dollar a day)and 1.B (Achieve full and productive employment and decent work for all, including women and young people)	Parameter: Number of locally recruited staff in the power plant and overpasses/fences built. Overpasses and fences will be built to enable safe access of locals to other side of the channel.	0
Access to affordable and clean energy services	No mitigation action is required for this indicator.	-	Parameter: Fossil fuel replaced Project will decrease	+

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Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
			dependency on import fossil fuels (Natural gas, Coal and petroleum) compared to baseline scenario.	
Human and institutional capacity	No mitigation measure is required for this parameter.		Parameter: Number of people participating stakeholder meetings.	0
*Quantitative employment and income generation	Mitigation measure is not required for this indicator.	MDG target 1.B (1.4, 1.5, 1.7 Achieve full and productive employment and decent work for all, including women and young people)	Parameter: Payment made to staff. Project will create new job opportunities compared to baseline scenario.	0
Balance of payments and investment	Mitigation measure is not required for this indicator.	MDG target 8.D (Deal comprehensively with the debt problems of developing countries through national and international measures in order to make debt sustainable in the long term)	Parameter: Currency saving due to avoided fuel import. Project will replace fossil fuel import for electricity generation and result in net foreign currency saving.	+
Technology transfer and	Mitigation measure is not	MDG target 8.F (In cooperation	Parameter: Expenditures for	0

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Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
technological self-reliance	required for this indicator.	with the private sector, make available the benefits of new technologies, especially information and communications)	equipments Project will enable latest technology transfer to Turkey and influence development of local suppliers and know-how in the country	

Justification choices, data source and provision of references	
Air quality	<p><u>SO₂ and NO_x emissions</u></p> <p>Project will decrease use of fossil fuels for electricity generation and prevent particulate matter, SO_x and odour which form as a result of incomplete combustion.</p> <p>(Source: National GHG Inventory of Turkey http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/tur_2009_crf_13apr.zip)</p>
Water quality and quantity	<p><u>Quantity of water released</u></p> <p>Since the project activity is a run-off-river type HEPP, it does not cause any pollution or change in water quality in terms of chemical, biological oxygen demand or any other pollutants. Maximum annual water use ratio has been calculated as 77.4% based on design flow rate of the plant and average river flow. As there is no water use for irrigation, domestic or industrial use, the only critical parameter is release of minimum amount of water from weir for aquatic life.</p> <p>Amount of flow will be monitored by DSI (State Hydraulics work Authority) through flow measurement station at the upstream and downstream of the plant.</p> <p>An expert assessment will be carried out after commissioning of the plant to evaluate the adequacy of the flow and impact on river habitat.</p> <p>(Source: EIA Report page147, Section V.2.2 , Revised Feasibility Report table</p>

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Justification choices, data source and provision of references	
	11.1)
Soil condition	<p><u>Soil Erosion, Excavation aggregates and sediment transport.</u></p> <p>Erosion risk is high in project site. Therefore, project design has been changed and considering this fact. Division of project into three parts and passing the channel route on right bank of the river bed(since the geological structure has been assessed more reliable on right bank) are some of the measures taken on design phase. Although the project does not have any change in erosion level compared to baseline, in order to monitor any potential impact on environment, erosion in the project site will be monitored continuously.</p> <p>Excavation aggregates obtained during construction will be used for road and weir body construction mainly. Remaining aggregates will be deposited in appropriate locations upon permission from relevant agencies.</p> <p>Sediments will pass through the weir via sediment passages integrated in weir design. No accumulation is preferred in weir as it will affect functionality of the weir.</p> <p>(Source: EIA Report page 147, Section VII, Section V.2.4, Section V.1.3 and section V.1.1, table 5.2.1.1)</p>
Other pollutants	<p><u>Solid&Liquid Wastes, Noise and Dust</u></p> <p>Noise level during construction has been chosen as other source of pollutant which has also been assessed during EIA study. It has been concluded that even all machines are operated at the same time; the noise limits wouldn't be reached. Also, since there exist no settlement near the construction site, impact of project is not expected to be significant.</p> <p>Dust will be emitted during construction works. In order to minimize dust emission, measures such as washing and screening will be taken. According to modelling study for dust, it has been determined that even if no measures are taken, the dust level will be at lower limit. Since both dust and noise emissions are limited to construction phase and assessment have shown that they at lower limit values, they will not monitored.</p> <p>All domestic wastes will be disposed according to the regulations. Measures including treatment systems and cesspits will be issued in the project site. Solid wastes will be collected and the recyclable ones will be stored separately. Domestic solid wastes will be carried to nearest settlement's landfill station.</p> <p>(Source: EIA Report page 150, Section V.2.10 and page 129 Section V.1.15, Section V.1.8)</p>
Biodiversity	<p><u>Plants affected&River habitat</u></p> <p>Project site does not include any endemic species. Some plants will be affected</p>

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Justification choices, data source and provision of references	
	<p>due to construction and site cleaning carried out in order to prevent uncontrolled erosion during construction and operation. In order to compensate the affected plantation, compensation will be made to Directorate of Forestry to be used for replantation in the same site and renovation of existing forest areas. Since the forest density is not very high and appropriate mitigation measures are issued, the indicator was scored as zero.</p> <p>Since the minimum water flow is continuously released to river bed and weir design involves a fish passage enabling upward migration, impact on biodiversity is not considered as significant. The design of the passage is made to guarantee free flow and minimum water depth from the passage to enable fish migration and act as attracting flow to direct the fishes. As the appropriate mitigation measures are taken during construction, the indicator was scored as zero.</p> <p>Parameter has been defined for biodiversity to ensure minimum depth for fish migration. Functionality of fish passage will be assessed by an independent expert and report will be submitted to DOE during verification. Additional measures will be issued if necessary to ensure functionality.</p> <p>For sediment transport, a passage has been included in weir design to prevent accumulation. Since the project is a run off river type hepp, it can not store sediment like dam type plants otherwise all the weir will be filled by sediment and project will be useless.</p> <p>(Source: Compensation payment made to Directorate of Forestry, EIA Report Section V.I.10)</p>
Quality of employment	<p><u>Number of Certificates</u></p> <p>Due to Health and Safety regulations and technical skills required for operating equipments, training will be provided to relevant staff. Also, some of the board operators will have training to get certificate for working at high voltage level as requested by local regulations. Trainings and certificates provided will increase their capacity compared to baseline level.</p> <p>(Source: Certificates & evidence for trainings to be provided during verification)</p>
Livelihood of the poor	<p><u>Number of Locally recruited staff</u></p> <p>Income of local people employed in the plant will increase as a result of project activities which will also have impact on overall spending in the Koyulhisar District. According to State Planning Organization statistics, Koyulhisar District is ranking as 653rd among 872 District in Turkey in terms of per capita income</p>

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Justification choices, data source and provision of references	
	<p>The project involves a channel which not close to settlements however in order to enable access to the other side of channel, overpasses and bridges will be built and fences will be installed around the overpasses in locations determined by locals.</p> <p>(http://ekutup.dpt.gov.tr/bolgesel/gosterge/2004/ilce.pdf page 202)</p>
Access to affordable and clean energy services	<p><u>Fossil Fuel Replaced</u></p> <p>The project will reduce dependency on fuel and energy import through use of local and renewable resources and help meet national energy demand and enable diversification in the energy supply. According to projections, electricity demand of Turkish grid will increase significantly in coming year. Therefore, this indicator was scored as positive.</p> <p>(Source: Capacity projection 2008-2017, http://www.teias.gov.tr/projeksiyon/CAPACITY%20PROJECTION%202008-2017.pdf figure 1., page 5)</p>
Human and institutional capacity	<p><u>Number of People attending meetings</u></p> <p>Educational activities which are not part of the usual schooling system, such as environmental training, awareness raising and knowledge dissemination will increase through stakeholder meetings. Also, project will increase human and institutional capacity of the workers in terms of technical skills. Since the impact will be limited, indicator was scored as neutral.</p> <p>(Source: LSC reports, trainings provided to workers)</p>
Quantitative employment and income generation	<p><u>Payments made to Staff</u></p> <p>About 200 people will be employed directly during construction and 15 people during operation. Since Koyulhisar District is ranking as 784th among 872 District in terms of per capita income, this will create a significant contribution to the local economy</p> <p>(Source: Social security and insurance payment documents, and (http://ekutup.dpt.gov.tr/bolgesel/gosterge/2004/ilce.pdf page 202))</p>
Balance of payments and investment	<p><u>Currency Saving</u></p> <p>Turkey is heavily dependent on import fossil fuel, especially natural gas which is imported, for electricity generation. Project will reduce fuel import and result in net foreign currency saving proportional to electricity generation.</p> <p>(Source: TEIAS: http://www.teias.gov.tr/ist2007/43.xls)</p>
Technology transfer and	<p><u>Equipment Expenditures</u></p>

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Justification choices, data source and provision of references	
technological self-reliance	Project will assist in transfer of new technology to Turkey. In addition to Technological skills of local suppliers and technicians are also expected to increase as a result of trainings provided by the equipment manufacturers. (Source: Equipment purchase agreements)

SECTION G. Sustainability Monitoring Plan

No	1	
Indicator	Air Quality	
Mitigation measure	N/A	
Chosen parameter 1.1	SO ₂ emissions by thermal power plants	
Current situation of parameter 1.1	Total SO ₂ emission related to electricity generation is about 936.1 Gg for 2007 according to National Inventory of Turkey ⁵ . Considering that electricity generation in 2007 is 183,339.7 GWh, SO ₂ emission per MWh is calculated as 5.3 kg/MWh.	
Future target for parameter 1.1	SO ₂ emission reduction corresponding to 115 GWh generation is calculated as 627 ton per year.	
Chosen parameter 1.2	NO _x emissions by thermal power plants	
Current situation of parameter 1.2	Total SO ₂ emission related to electricity generation is about 202.9 Gg for 2007 according to National Inventory of Turkey. NO _x emission per MWh is calculated as 1.1 kg.	
Future target for parameter 1.2	NO _x emission reduction corresponding to 115 GWh generation is calculated as 127 ton per year.	
Way of monitoring	How	Electricity generated by Resadiye-I HEPP and NO _x and SO ₂ emission data from GHG inventory of Turkey will be used as reference in calculation of the emission reduction.
	When	Yearly
	By who	Project owner

No	2	
Indicator	Water Quality and Quantity	
Mitigation measure	Release of minimum flow to protect aquatic life	
Chosen parameter 2	Flow rate of water released from the weir.	
Current situation of parameter 2	Project has been commissioned by September 2009	
Estimation of baseline situation of parameter	Natural flow of river	
Future target for parameter 2	Minimum 10% of average natural flow will be released. There will be an expert assessment on adequacy of flow released. The expert report will include references and data relevant to local conditions and fieldwork. Any recommendations or need for additional measures will be discussed in the report and actions will be implemented if required upon expert report.	

5

http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/tur_2009_cr_f_13apr.zip ,Worksheet:Table1s1)

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Way of monitoring	How	Flow measurements from the weir.
	When	Continuously
	By who	Project Owner

No	3	
Indicator	Soil Condition	
Mitigation measure	Excavation wastes used in construction and disposed along the channel for building access road. Construction of sediment passages to enable sediment transport and designing project considering erosion risk.	
Chosen parameter 3.1	Storage of excavation wastes in appropriate locations.	
Current situation of parameter 3.1	None as there exist no excavation waste.	
Future target for parameter 3.1	Disposal of excavation wastes appropriately.	
Way of monitoring	How	Through site visits
	When	Once after completion of the construction
	By who	Project owner
Chosen parameter 3.2	Accumulation of Sediment	
Current situation of parameter 3.2	None as there exist no plant	
Future target for parameter 3.2	No accumulation in the weir.	
Way of monitoring	How	Through site visits
	When	Yearly
	By who	Project owner
Chosen parameter 3.3	Soil Erosion	
Current situation of parameter 3.3	Erosion without project activity.	
Future target for parameter 3.3	No erosion or leakage due to project activities.	
Way of monitoring	How	Through site visits
	When	Yearly
	By who	Project Owner

No	4	
Indicator	Other pollutants	
Mitigation measure	Solid & Liquid Waste	
Chosen parameter	Appropriate storage and disposal of wastes	
Current situation of parameter	No waste	
Future target for parameter	Disposal of solid wastes in compliance with regulations and Installation of waste water treatment plant/cesspit	

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Way of monitoring	How	Through checking existence and operation of waste treatment/collection equipment and disposal records
	When	Continuously
	By who	Project owner

No	5	
Indicator	Biodiversity	
Mitigation measure	Minimum water depth in the fish passage and additional measures if identified by expert.	
Chosen parameter	Functionality of fish passage	
Current situation of parameter	A fish passage has been built which enables free flow from the weir and upward migration.	
Estimation of baseline situation of parameter	None	
Future target for parameter	Fish passage enabling upward migration of species in the river bed.	
Way of monitoring	How	Monitoring free flow from the fish passage and assessment of functionality of the fish passage by an independent expert. Expert study will include site visit and refer to relevant studies and involve recommendations (if any) and implementations of the recommendations will be submitted during verification.
	When	Continuously (for minimum flow)/ once after commissioning of the plant(fish passage functionality).
	By who	Project Owner

No	6	
Indicator	Quality of Employment	
Mitigation measure	Recruited people will be trained for increasing technical skills and awareness about health, safety and environmental issues.	
Chosen parameter	Number of people trained (certificates)	
Current situation of parameter	None	
Future target for parameter	All technical staff working with high voltage equipments.	
Way of monitoring	How	Documents for trainings and certificates issued.
	When	Annually
	By who	Project owner

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No	7	
Indicator	Livelihood of the poor	
Mitigation measure	Building Overpasses and installing fences	
Chosen parameter	# of overpasses and length of fences	
Current situation of parameter	No need for overpass	
Future target for parameter	Building overpasses and fences in locations determined upon needs of locals.	
Way of monitoring	How	Site visits and interview with locals
	When	Annually
	By who	Project owner

No	8	
Indicator	Quantitative employment and income generation	
Mitigation measure	Mitigation measure is not required.	
Chosen parameter	Payments made to staff	
Current situation of parameter	None	
Future target for parameter	200 people during construction and 15 people during operation stage is planned to be employed. Payment made is to be determined later.	
Way of monitoring	How	Through evaluation documents for wages paid and social security documents.
	When	Yearly
	By who	Project owner

No	9	
Indicator	Balance of payments	
Mitigation measure	Decrease dependency on fossil fuel through increasing use of local resources.	
Chosen parameter	Currency saving.	
Current situation of parameter	<p>In 2007, about 20.5 bn m³ natural gas been used for about 95,000 GWh electricity generation and about € 5 bn has been spent.</p> <p>Source: http://www.teias.gov.tr/ist2007/43.xls and http://www.teias.gov.tr/ist2007/36(06-07).xls for generation and fuel consumption. http://www.esgaz.com.tr/dogalgazfiyatleri.asp for natural gas price.</p>	
Future target for parameter	Decrease natural gas consumed for electricity generation. Approximately consumption of 25 million m ³ of natural gas is expected to be avoided corresponding to € 6.5 million annually.	
Way of monitoring	How	Through comparing electricity generated by Reşadiye-I HEPP and natural gas that would be used to produce the same amount of electricity according to baseline scenario.
	When	Yearly
	By who	Project owner

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No	10	
Indicator	Other pollutants-Noise	
Mitigation measure	Measuring the noise and implementing measures if necessary.	
Chosen parameter	Noise level in the plant during operation.	
Current situation of parameter	None	
Future target for parameter	Distribution of protective equipment to workers and implementing additional measures if necessary after measurement.	
Way of monitoring	How	Through checking measurement records and availability of protective equipment for staff.
	When	Continuously
	By who	Project Owner

No	11	
Indicator	DNH-SP9	
Mitigation measure	Planting new trees for reforestation of the area	
Chosen parameter	Trees planted	
Current situation of parameter	Reforestation has been applied in most of the land where as plantation has been scheduled by 2012 or 2013 for rest of area.	
Future target for parameter	All area affected should be planted	
Way of monitoring	How	Site visits, pictures and documents from Directorate of Forestry
	When	Once after plantation activities are completed.
	By who	Project owner

Additional remarks monitoring

SECTION H. **Additionality and Conservativeness**



H.1. **Additionality**

Additionality assessment is performed according to the “Tool for the demonstration and assessment of additionality” approved by UNFCCC. Details are available in PDD

H.2. **Conservativeness**

Conservative approach has been followed in calculating baseline emission factors and investment analysis sections as detailed in PDD.

ANNEX 1 ODA declarations

**TURKON – MNG
ELEKTRİK ÜRETİMİ VE
TİCARET A.Ş.**

Uğur Mumcu Caddesi No: 88
06700 Gaziosmanpaşa – ANKARA
Tel:(0312) 436 30 00 (30 hat)
Faks:(0312) 436 64 66

Ankara, 02 January 2009

Project reference: Hamzalı and Reşadiye (Reşadiye I-II-III) Hydroelectric Power Plants

To: Gold Standard Foundation

Declaration of Non-Use of Official Development Assistance by Project Proponent;

As Legal Owner ("Project Proponent") of the above-referenced Projects, acting on behalf of all Projects participants, I now make the following representations:

I. Gold Standard Documentation:

I am familiar with the provisions of Gold Standard Documentation relevant to Official Development Assistance (ODA). I understand that the above-referenced Projects are not eligible for Gold Standard registration if the Projects receive or benefit from Official Development Assistance under the condition that some or all credits coming out of the Projects are transferred to the ODA donor country. I now expressly declare that no financing provided in connection with the above-referenced Projects have come from or will come from ODA that has been or will be provided under the condition, whether express or implied, that any or all of the credits (CERs, ERUs or VERs) issued as a result of the Projects' operation will be transferred directly or indirectly to the country of origin of the ODA.

II. Financier Declarations:

I hereby declare that I have submitted 1 declaration of Non-Use of ODA, representing declarations from all project financiers. If additional financiers are added to the Projects, I will promptly notify the Gold Standard Foundation and ensure that additional declarations are promptly submitted.

III. Financing Plan:

I agree to complete and submit a sufficiently clear and transparent financing plan for the Projects so that during validation the Validator can assess compliance with the Non-Use of ODA requirement.

IV. Duty to Notify Upon Discovery:

If I learn or if I am given any reason to believe at any stage of projects design or implementation that ODA has been used to support the development or implementation of the Projects, or that an entity providing ODA to the host country may at some point in the future benefit directly or indirectly from the credits generated from the projects as a condition of investment, I will make this known to the Gold Standard immediately.

V. Sanctions:

I am fully aware that under Section 10 of the Gold Standard Terms and Conditions sanctions and damages may be incurred for the provision of false information related to Projects and/or Gold Standard credits.

TURKON - MNG
ELEKTRİK ÜRETİMİ
VE TİCARET A.Ş.

Signed:

Name:

Title:

On behalf of:

Güven BALKAN

Member of Board

TURKON-MNG Electricity Generation and Trading Co. Inc.

ANNEX 2 Special Guidance for Run-off-River HEPP project

Management domain	
Minimum flow which guarantees habitat quality and prevents critical oxygen and chemical properties.	Minimum 10% of average flow will be released for the section between the weir and the HEPP. This minimum flow shall guarantee habitat quality and prevent critical oxygen and chemical properties.
No disconnection of lateral rivers.	There shall be no disconnection of lateral rivers. Flows of Kelkit River will be discharged back to the same river bed after being used in energy production.
Minimum water depth for fish migration during critical periods.	Min 10% of average flow shall always be released from the weir, even in dry seasons when there is not enough water for energy production, which will aid aquatic life, compared to the conditions before the construction of the project.
Lateral and vertical connectivity shall not be substantially disturbed	There shall be no disconnection of lateral rivers. Since the project is a small run of river project, it does not have a storage volume to substantially disturb the underground waters.
Provides sufficient transport capacity for sediments	The weir has been designed to prevent any sediments accumulation before the weir will be released to downstream.
Landscape compartments shall not be destroyed. Flood plain ecosystems shall not be endangered.	Since the project does not have a dam but a small weir to regulate the waters of the brook, landscape compartments and flood plain ecosystems shall not be endangered.
Hydropeaking	
Rate of change of water level should not impair fish and benthic population.	Project does not involve a storage capacity. A consistent flow of 10% of natural flow shall be flowing, so that there shall not be any significant change in water level. Regarding the consistency of rate of flow after the weir, the weir shall regulate and help the consistency of the flow of water.
Reduction in water level should not lead to drying of the water course.	Same amount of water shall be released even in dry seasons.
No isolation of fish and benthic organisms when water level decreases	The weir shall prevent the isolation of fish and organisms by providing a steady minimal flow, even when water level decreases.
Reservoir Management	Since the project is a run of river power plant, it does not feature any large storage volume, but a weir to regulate the water. Unlike the dam reservoirs, a reservoir operation policy would not be applied to this project.
Sediment Management	
Sediments have to pass through the power plant.	Sediment management will be performed and controlled by means of a sediment passage and a stilling basin (150 m long and 15 m wide), which have been designed and constructed as the integral

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	parts of the Project.
Power Plant Design	
Free fish migration upwards and downwards.	Since there shall be always water flowing in the original river bed, free fish migration upwards and downwards will be available through the fish passage of the weir.
Protection of animals against injury and death stemming from power plant operations.	Necessary precautions shall be taken in the power plant to prevent injury to animals during operation.
Social Impacts	
Cultural Landscapes	Cultural Landscapes shall not be changed.
Human heritage (including protection of special ethnic groups) and preservation of life styles.	There shall not be any negative social impact on human heritage and way of life since the power plant shall not be on any settlement territory. It shall help the locals by providing additional employment and enable irrigation of agricultural lands.
Empowerment of local stakeholders in the decision making process about mitigation and compensation of social impacts	Local stakeholders shall be able to express their views about social impacts at stakeholders meetings whereby the project owners would take the proper mitigation measures.
Resettlement of local population	Settlement of local population is not affected.
Build additional social infrastructure due to migration induced by the project.	The project would not induce any migration.
Water quality and fishing losses affecting downstream riverside population.	The downstream water quality shall not be affected, since the same water flows shall be kept downstream. Besides, the weir shall provide fishing opportunities for the local stakeholders as well as downstream population.