

GOLD STANDARD PASSPORT

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 936.51 Gg for 2007 according to National Inventory of Turkey ¹ . Considering that electricity generation in 2007 is 183,339.7 GWh, SO ₂ emission per MWh is calculated as 5.1 kg/MWh.
Future target for parameter 1.1		SO ₂ emission reduction corresponding to 39 GWh generation is calculated as 199 tons per year.
Chosen parameter 1.2		NOx emissions by thermal power plants
Current situation of parameter 1.2		Total NOx emission related to electricity generation is about 202.09 Gg for 2007 according to National Inventory of Turkey. NOx emission per MWh is calculated as 1.1 kg/MWh.
Future target for parameter 1.2		NOx emission reduction corresponding to 39 GWh generation is calculated as 43 tons per year.
Way of monitoring	How	Electricity generated by Çataloluk 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 (FAR2)
Indicator	Water Quality and quantity
Mitigation measure	Release of minimum flow to protect aquatic life.

¹

http://unfccc.int/files/national_reports/annex_i_ghg_inventories/national_inventories_submissions/application/zip/tur_2009_crf_13apr.zip ,Worksheet:Table1s1)

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Chosen parameter		Flow rate of water released
Current situation of parameter		Natural flow of river course
Future target for parameter		Minimum 10% water for aquatic life in riverbeds. (Feasibility Study, Page 28) and flow needed for locals for irrigation activities. Flow released should be sufficient at any time to prevent dried river, isolation of fish and benthic organisms, and critical oxygen concentration and ensure fish migration and guarantee habitat quality.
Way of monitoring	How	The considered minimal water flow will be assessed by an independent expert with relevant background and experience and the expert opinion will be provided to the DOE in view of the verification process. The statement by the expert will refer to relevant analysis methods including fieldwork and observations and based on credible information on the relevant parameters (seasonal variations of water river regime, etc.). It will account for all aspects materially related to the minimal water flow, e.g. natural habitat (riverine and floodplain ecosystems), vertical disconnectivity (underground water recharging), and shall also discuss the adequacy of the location of the gauging stations. The minimal water flow shall be included in the Monitoring Plan with an expert opinion based on fieldwork and observations to be provided as part of the first monitoring report on time for the first verification. In case it proves not to be sufficient, recommendations on available alternatives and compensation measures shall be discussed in the statement provided by the expert. The verification DOE shall audit the installed stations and assess the correctness of the flow rate measurements as part of the verification report.
	When	Flow will be observed continuously and recorded hourly. Locals will be interviewed to have their opinion.
	By who	Project Owner

No	3
Indicator	Soil Condition
Mitigation measure	Handling of excavation wastes appropriately according to the national regulations. Solid waste such as construction bars, package wastes...etc is sold to scrap dealer and the logs are distributed to the locals.
Chosen parameter	Soil pollution by excavation wastes

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Current situation of parameter		The construction is finished and the solid waste is handled according to the legislation.
Future target for parameter		None
Way of monitoring	How	Letters for disposal from local representatives or disposal records will be submitted.
	When	Once after construction is completed.
	By who	Project Owner

No		4
Indicator		Other Pollutants
Mitigation measure		Waste oil from equipment will be handled according to the national regulations. They will be collected in leak proof tanks and will be handed in licensed collectors.
Chosen parameter		Waste oil: Volume of waste oil
Current situation of parameter		None
Future target for parameter		None
Way of monitoring	How	Records for storage or disposal (if any waste oil is generated during verification period) or letter from plant manager will be submitted.
	When	Yearly
	By who	Project Owner

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No		5
Indicator		Quality of Employment
Mitigation measure		All recruited technical staff will be trained
Chosen parameter		Number of personnel certified / trained
Current situation of parameter		None as there exist no staff before project implementation.
Future target for parameter		All technicians to be trained for health and safety issues. Additional trainings should either be provided for staff working with high voltage equipment or staff having high voltage equipment certificates should be recruited
Way of monitoring	How	Through review of employment records and training documents/certificates
	When	Yearly
	By who	Project Owner

No		6
Indicator		Quantitative employment and income generation
Mitigation measure		Recruiting staff for plant from the local people
Chosen parameter		Payments made to staff
Current situation of parameter		None as there exist no payment in the baseline situation.
Future target for parameter		Staff planned to be recruited from local people
Way of monitoring	How	Employment records and social security documents.
	When	Yearly
	By who	Project Owner

No	7
Indicator	Balance of Payments
Mitigation measure	Not required
Chosen parameter	Currency saving due to avoided fuel import
Current situation of parameter	In 2008, about 21.6 billion m ³ natural gas been used ² for about 98,685.3 GWh electricity generation ³ and about € 11 billion TL has been spent. Source for NG price http://www.esgaz.com.tr/dogalgazfiyatleri.asp

² <http://www.teias.gov.tr/istatistik2008/44.xls>

³ [http://www.teias.gov.tr/istatistik2008/32\(75-08\).xls](http://www.teias.gov.tr/istatistik2008/32(75-08).xls)

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Future target for parameter		Approximately consumption of 7.0 million m ³ of natural gas is expected to be avoided corresponding to 3.6 million TL annually.
Way of monitoring	How	Calculating NG and currency saving due to avoided NG import corresponding to electricity generation by proposed project.
	When	Yearly
	By who	Project Owner

No		8 (FAR 1)
Indicator		Biodiversity
Mitigation measure		Building a functional fish passage. Fish passage has been designed by experienced engineering company considering river characteristics and also reviewed by Province Directorate of Agriculture's experts. The functionality of the fish passage will also be monitored by the experts after commissioning of the plant as seen in letter in Annex 6.
Chosen parameter		Functionality and effectiveness of fish passage and planting new trees in the construction site.
Current situation of parameter		None as there exist no project activity.
Future target for parameter		Proper functioning of the fish passage and planting trees around the project site.
Way of monitoring	How	The effectiveness of the fish passage design shall be assessed by an independent expert with relevant background and experience and the expert opinion provided to the DOE in view of the verification process. The opinion provided will be supported by references to literature and data relevant to the local conditions. The effectiveness of the fish passage shall be included in the Monitoring Plan with an expert opinion based on fieldwork and observations to be provided as part of the first monitoring report on time for the first verification. In case the design proves not to be effective enough, recommendations on available alternatives and compensation measures shall be discussed in the statement provided by the expert.
	When	After commissioning of the plant and based on the monitoring frequency determined by expert.
	By who	Project Owner

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No		9
Indicator		Livelihood of the poor
Mitigation measure		Valuation of the expropriation land and making payments to locals
Chosen parameter		Compensation payments made for expropriation
Current situation of parameter		None as there exist no expropriation
Future target for parameter		All payments should be made to land owners
Way of monitoring	How	Through interview by locals and review of payment records.
	When	Once after commissioning of the plant.
	By who	Project Owner

No		10
Indicator		Livelihood of the poor
Mitigation measure		Cleaning of the irrigation channel shrunk during construction has been made after the issue was raised by locals.
Chosen parameter		Proper functioning of the irrigation channel
Current situation of parameter		Flow in the channel without project activity.
Future target for parameter		Channel should be operational as before the project implementation.
Way of monitoring	How	Through interview by locals and submission pictures of the channel.
	When	Once after commissioning of the plant.
	By who	Project Owner

No		11
Indicator		Livelihood of the poor
Mitigation measure		Renovation of village road after construction works
Chosen parameter		Pavement of the village road
Current situation of parameter		Partially paved village road exist between Dongel Village and main road.
Future target for parameter		Road should be renovated and function properly
Way of monitoring	How	Through interview by locals and submission pictures of the road.
	When	Once after commissioning of the plant.
	By who	Project Owner

No	12
Indicator	Livelihood of the poor
Mitigation measure	Building houses for locals

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Chosen parameter		Number of houses built for poors.
Current situation of parameter		Some of the houses are not properly built, old or within the existing flood area of the river bed.
Future target for parameter		3 houses are planned to be built for locals.
Way of monitoring	How	Checking the number of houses built and submission of pictures of the houses .
	When	Once after commissioning of the plant.
	By who	Project Owner

No		13
Indicator		Biodiversity
Mitigation measure		Planting trees around the project site
Chosen parameter		Number of trees planted
Current situation of parameter		Tree planting has been carried out in some parts around powerhouse. Further planting is planned along the penstock.
Future target for parameter		Around 5,000 trees are planned to be planted which may increase if necessary.
Way of monitoring	How	Through review of documentation (pictures etc) of planted trees.
	When	Once after commissioning of the plant.
	By who	Project Owner

No		14
Indicator		Soil Condition Sediment Management
Mitigation measure		Enabling continuous sediment management and effective sediment transport via stilling basing with sediment gates. Building stilling basin with sediment to enable sediment transport along the river bed. Stilling basin are sections of conveyance line where the cross section of the conveyance line is increased so that average speed of water decreases and the sediments are precipitates. Sediement collected are discharged back to the river through canalettes or pipes built between river bed and conveyance line.
Chosen parameter		Sediment transport along the river bed.
Current situation of parameter		Capturing the river sediment by the plant
Future target for parameter		Effective sediment transport along the river bed.
Way of monitoring	How	A sediment management plan shall be provided as part of the project documentation, on time for verification. Actual sediment management against the sediment management

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		plan will be assessed by DOE via interviews and reasons behind any identified deviations(if any) will be evaluated during verification.
	When	Annually
	By who	Project Owner

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.