

SELALE 13.61 MW Hydroelectric Power Plant Gold Standard Passport

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SECTION A. Project Title

SELALE 13.61 MW Hydroelectric Power Plant

SECTION B. Project description

SELALE is a 'Run-off-River' type hydroelectric power plant(HEPP) project. SELALE HEPP Project is planned to be implemented by Muradiye Elektrik Üretim A.Ş and the project site is located on Bendimahı weir in Muradiye province of Van.

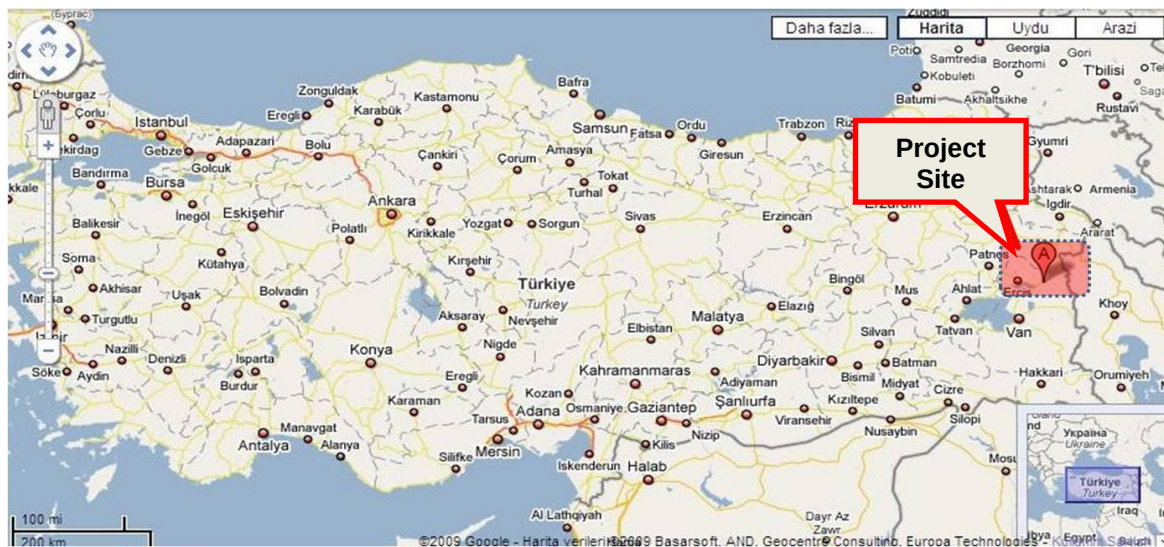


Figure 1. SELALE HEPP Project Area

Selale Regulator will be built at 1,782 meters elevation on Bendimahı Weir and then directed to Selale HEPP with a transmission line of 4.6 km. Selale Regulator will be built 7.9 meters above the weir bed and a minimum flow will be ensured through the weir to maintain the natural habitat.

The water will be released to the weir bed without a change in chemical composition after passing through transmission lines and turbines at a rate of 19.0 m³/second. Total annual electrical energy generation is estimated at 56.22 GWh.

No pollution source is anticipated during the construction and operation of the project. Run-off river HEPP projects are among the projects with minimal impact on environment and local people. No environmentally harmful emission is anticipated. After the conversion of potential energy of water to electrical energy the water flow will be maintained without any pollution. During the construction all regulations regarding protection of air quality will be followed. Any solid and liquid wastes formed during the construction and operation of the plant will be collected and discharged in accordance with 'Control of Solid Wastes' and 'Control of Water Pollution' regulations.

The project is anticipated to have a binary impact on economical structure. The primary impact is

regional and local people will be offered employment during the construction of the project. The construction work is planned to take 2 years and 55 personnel is planned to be employed within the scope of the project. This opportunity will increase income level of local population incrementally and will contribute to the prevention of migration from the region during the construction of the project. The positive impact on economical structure will also indirectly contribute to the quality of social life in the region. As a secondary impact the plant is important for Turkish economy by reducing energy supply deficit and by integrating generation surplus into the national grid.

The plant will have an installed capacity of 13.61 MW and generate 56,220 MWh energy annually. According to calculations based on electricity generation estimates, SELALE HEPP project will result in a CO₂ reduction of 36,712 tons per year due to use of renewable resources.

According to Turkish Electricity Transmission Company (TEIAS) statistic, in 2007 about 50% of the electricity has been generated by natural gas (NG) power plants which is fully imported and 20bn m³ NG has been consumed. In terms of fuel dependency, SELALE HEPP is expected to replace about 9 million m³ NG and contribute to balance of payments which will, in addition, increase air quality and access to affordable energy services in national level¹.



Figure 2. SELALE HEPP Project site

¹ <http://www.teias.gov.tr/ist2007/43.xls>

SECTION C. Proof of project eligibility

C.1. Scale of the Project

Project Type	Large	Small
	☐	☐
	☐	☐
	☐	☐
	☐	☒
	☐	☐
	☐	

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?	☒	☐
Does your project activity classify as an End-use Energy Efficiency Improvement project?	☐	☒

Project activity involves construction of a 13.61 MW capacity run-off-river hydroelectric power plant for electricity generation. Project category is included in the sectoral scope 1 "Energy Industry – Renewable Sources" according to the UNFCCC definition.

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Pre Announcement	Yes	No
Was your project previously announced?	☐	☒
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	☒
Methane	☐
Nitrous oxide	☐

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 by UNFCCC (T2.5.3)
	☐	☒	☐

SECTION D. Unique project identification

D.1. GPS-coordinates of project location

	Coordinates
Latitude (Weir/Powerhouse)	N 39° 03' 01/ N 39° 01' 02"
Longitude (Weir/Powerhouse)	E 43° 45' 38"/ E 43° 44' 38"



Selale HEPP Project is situated in Muradiye district of Van province. The Project is located on Bendimahı Weir.

D.2. Map

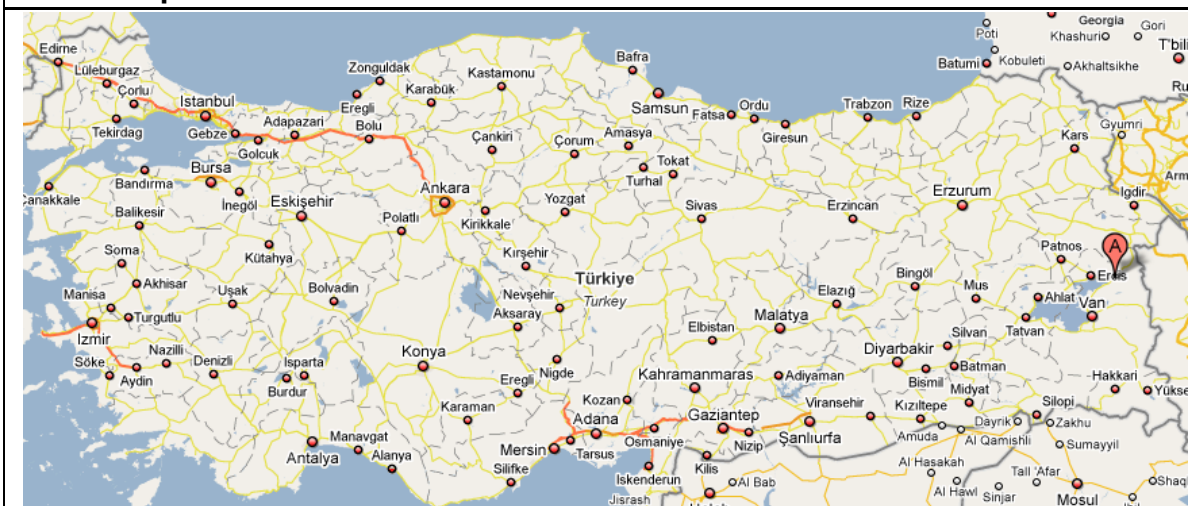


Figure 3. SELALE HEPP Project Location

SECTION E. Outcome stakeholder consultation process

E.1. Assessment of stakeholder comments

The initial stakeholder meeting has been held on 16th of April, 2009 in Muradiye Town which is the closest location to SELALE Hydropower Plant. In general stakeholders' comments were positive about the Project. 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.

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

- Will the project have any impact on agriculture in the region?,
- What sort of additional contributions will the project have on the region? and
- Consideration of employment of local people.

Stakeholder Comment	Assessment	Response to comment
Will the project have any impact on agriculture in the region?	Reasonable	The company will ensure there will be a required amount of water flow not to impact agricultural use as regulated by legislations.
What sort of additional contributions will the project have on the region?	Taken into Account	The company recognizes that local people expect a variety of contributions for the region.
Job Opportunities.	Taken into Account	The company recognizes that there is an interest in job opportunities associated with the plant.

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

E.2. Stakeholder Feedback Round

Feedback round is planned to be organized receiving comments from GS about local consultation meeting. Feedback round will be organized to include all identified stakeholders. Summary of the project documents in Turkish, including outcomes of the local stakeholder consultation meeting will be made available to stakeholders either by mail or through local governors, village heads. Also, original copies of the documents will be made available to all stakeholders through company web page (<http://www.gte.uk.com>).

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 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 complicit in Human Rights abuses.	Not Relevant. Project activities do not cause any human rights abuse and since there exist not indigenous people affected within the project boundaries.	N/A	N/A
2 The Project does not involve and is not complicit in involuntary resettlement.	Not Relevant. Project does not involve any involuntary resettlement.	N/A	N/A
3 The Project does not involve and is not complicit in the alteration, damage or removal of any critical cultural heritage.	Not Relevant. There exists no cultural heritage within the project site.	N/A	N/A
Labour Standards			
4 The Project respects the employees' freedom of association and their right to collective bargaining and is not complicit in restrictions of these freedoms and rights	Not Relevant. All staff recruited are employed according to the national legislations and project does not prevent collective	N/A	N/A

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Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
	bargaining or encourage restriction of freedoms and rights		
5 The Project does not involve and is not complicit in any form of forced or compulsory labour.	Not Relevant: Project does not involve any forced or compulsory labour.	N/A	N/A
6 The Project does not employ and is not complicit in any form of child labour.	Not Relevant: Since project does not involve any child labour. Turkey is a party of IPEC* since 1992	N/A	N/A
7 The Project does not involve and is not complicit in any form of discrimination based on gender,	Not Relevant. Discrimination based on gender is illegal in Turkey.	N/A	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	Work Safety&Risk of accidents	Low	All personnel are trained in terms of work safety and relevant safety protocols. An emergency plan is issued and in force for the 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 to human health or the environment, precautionary measures should be taken even if some cause and effect relationships are not fully established scientifically."	Preservation of the waterfall in the region.	Low	The original project design has been revised and the project is split into two to preserve the waterfall in the region.
10 The Project does not involve and is not complicity	There exists a natural waterfall	Low	Project design has been changed to

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Safeguarding principles	Description of relevance to my project	Assessment of my project risks breaching it (low/medium/high)	Mitigation measure
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	before Şelale Weir.		save the waterfall and landscape within the project boundary.

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. The minimum flow is mandated by State Hydraulics Works.	-	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	Disposal of solid waste in accordance with the regulations.	-	Parameter: Disposal of solid waste Project will not have an impact on the soil condition of the region. All of the solid waste resulting from construction	0

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Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
			will be disposed according to state and local regulations.	
Other pollutants	No mitigation measure is required since there exist no settlement close to project site and noise during construction is anticipated to be lower than allowed limits.	-	Parameter: Noise level during construction. Project will not create any other pollutant. Noise level is not expected to have an impact on local ecology according to feasibility report.	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 positions created during construction & operation phases. All Health and Safety measurements will be applied according to local regulations.	-	Parameter: Number of certificates issued/trainings provided.	+

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Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Livelihood of the poor	No mitigation action is required since local people will naturally have priority in recruitment process due to logistic purposes also.	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. Project will increase income of local people compared to baseline scenario through locally recruited staff and supply of plant needs from region.	+
Access to affordable and clean energy services	No mitigation action is required for this indicator.	-	Parameter: Fossil fuel replaced Project will decrease 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. Project will contribute increasing awareness about environmental issues of the local people through stakeholder consultation process.	0

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Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
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.	+
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 technological self-reliance	Mitigation measure is not required for this indicator.	MDG target 8.F (In cooperation with the private sector, make available the benefits of new technologies, especially information and communications)	Parameter: Expenditures for 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	<u>SO₂ and NO_x emissions</u> 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. (Source: National GHG Inventory of Turkey)

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	http://unfccc.int/files/national_reports/annex i ghg inventories/national inventories submissions/application/zip/tur 2009 crf 13apr.zip)
Water quality and quantity	<u>Quantity of water released</u> 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. 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. Minimum amount water that should be released from the weir is determined during EIA study. Amount of flow will be monitored by DSI (State Hydraulics work Authority) through flow measurement station at the upstream and downstream of the plant.
Soil condition	<u>Solid Waste</u> Waste material will be analyzed and decomposed and harmful waste resulting from the construction will be disposed in accordance with state and local regulations in order to prevent any damage to soil condition. (Project EIA Report)
Other pollutants	<u>Noise level</u> Noise level during construction has been chosen as other source of pollutant which has also been assessed during feasibility study. It has been concluded that the noise level will not have a significant impact, since there exist very few settlements near the construction site and the noise due excavation equipments is lower than the limits.. (Project EIA Report)
Biodiversity	<u>Plants affected</u> Some plants will be affected 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. (Source: Compensation payment made to Directorate of Forestry)
Quality of employment	<u>Number of Certificates</u> 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

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	provided will increase their capacity compared to baseline level. Therefore, scoring for this indicator was given as positive. (Source: Certificates & evidence for trainings to be provided during verification)
Livelihood of the poor	<u>Number of Locally recruited staff</u> 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 Muradiye District. According to State Planning Organization statistics, Muradiye District is ranking as 836th among 872 District in Turkey in terms of social and economic development. (http://ekutup.dpt.gov.tr/bolgesel/gosterge/2004/ilce.pdf page 102)
Access to affordable and clean energy services	<u>Fossil Fuel Replaced</u> 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. (Source: Capacity projection 2008-2017, http://www.teias.gov.tr/projeksiyon/CAPACITY%20PROJECTION%202008-2017.pdf figure 1., page 5)
Human and institutional capacity	<u>Number of People attending meetings</u> 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. Therefore, the indicator was scored as positive. (Source: LSC reports, trainings provided to workers)
Quantitative employment and income generation	<u>Payments made to Staff</u> About 300 people will be employed directly during construction and 10 people during operation. Since Muradiye District is ranking as 836th among 872 District, this will create a significant contribution to the local economy (Source: Social security and insurance payment documents, and (http://ekutup.dpt.gov.tr/bolgesel/gosterge/2004/ilce.pdf page 102))

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Balance of payments and investment	<u>Currency Saving</u> 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. (Source: TEIAS: http://www.teias.gov.tr/ist2007/43.xls)
Technology transfer and technological self-reliance	<u>Equipment Expenditures</u> 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)

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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 ² . 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 56.220 GWh generation is calculated as 306.2 ton per year.
Chosen parameter 1.2		NOx 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. NOx emission per MWh is calculated as 1.1 kg.
Future target for parameter 1.2		NOx emission reduction corresponding to 56.220 GWh generation is calculated as 61.7 ton per year.
Way of monitoring	How	Electricity generated by Selale 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 developer/Verifier

No		2
Indicator		Water Quality and quantity
Mitigation measure		Release of minimum flow to protect aquatic life.
Chosen parameter		Flow rate of water released
Current situation of parameter		Natural flow of river course
Future target for parameter		To be mandated by DSI
Way of monitoring	How	Flow measurements at the upstream and downstream of weir
	When	Continuously
	By who	Project developer/Verifier

No	3
Indicator	Soil Condition
Mitigation measure	Disposal of waste material
Chosen parameter	Disposal of the construction waste
Current situation of parameter	none

2

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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Future target for parameter		No change is expected.
Way of monitoring	How	Control of damage in weir and channel.
	When	Continuously
	By who	Project developer/Verifier

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	Once for crediting period
	By who	Project developer/Verifier

No		7
Indicator		Livelihood of the poor
Mitigation measure		Priority in recruitment for local people
Chosen parameter		Local people employed during construction and operation phases
Current situation of parameter		None
Future target for parameter		Number of locally recruited people will be determined during construction and operation stage.
Way of monitoring	How	Employment and social security documents.
	When	Once for crediting period
	By who	Project developer/Verifier

No		10
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		300 people during construction and 10 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	Once for crediting period or yearly
	By who	Project developer/Verifier

No		11
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		In 2007, about 20.5 bn m3 natural gas been used for about

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		95,000 GWh electricity generation and about € 5 bn has been spent. 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/dogalgazfiyatlari.asp for natural gas price.
Future target for parameter		Decrease natural gas consumed for electricity generation. Approximately consumption of 9 million m ³ of natural gas is expected to be avoided corresponding to € 2.5 million annually.
Way of monitoring	How	Through comparing electricity generated by Selale HEPP and natural gas that would be used to produce the same amount of electricity according to baseline scenario.
	When	Yearly
	By who	Project developer/Verifier

No		12
Indicator		Technology transfer and Self reliance
Mitigation measure		Mitigation measure is not required for this indicator.
Chosen parameter		Equipment expenditures
Current situation of parameter		None
Future target for parameter		To be determined during implementation phase.
Way of monitoring	How	Review of purchasing agreements.
	When	Yearly
	By who	Project developer/Verifier

Additional remarks monitoring

As part of the equipments will be provided from local companies, this will contribute development of local manufacturing and service companies working on the subject.

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



30.07.2009

Muradiye Ayrancılar and Şelale HEPPs

To: Gold Standard Foundation

Declaration of Non-Use of Official Development Assistance by Project

Proponent

Muradiye Elektrik Üretim A.Ş.

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

Mr. Behzat AKSARAY

I hereby declare that I am duly and fully authorised by the legal owner ("Project Proponent") of the above-referenced project, acting on behalf of all project participants, to make the following representations on Project Proponent's behalf:

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 project is not eligible for Gold Standard registration if the project receives or benefits from Official Development Assistance under the condition that some or all credits coming out of the project are transferred to the ODA donor country. I now expressly declare that no financing provided in connection with the above-referenced project has 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 project's 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 declarations of Non-Use of ODA, representing declarations from all project financiers. If additional financiers are added to the project, 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 project 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 project design or implementation that ODA has been used to support the development or implementation of the project, 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 project 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.

Signed: 30.07.2009
Name: Behzat AKSARAY
Title: Board Member
On behalf of:


MURADIYE
ELEKTRİK ÜRETİM A.Ş.

MURADIYE ELEKTRİK ÜRETİM A.Ş.

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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 flow of water mandated by state hydraulics works (DSI) 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 Bendimahi Weir will be discharged back to the same river bed after being used in energy production.
Minimum water depth for fish migration during critical periods.	Minimum flow of water mandated by state hydraulics works (DSI) 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. Additionally there will be pebble passages to ease transfer of sediments.
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 minimum flow of water mandated by state hydraulics works (DSI) 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

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	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, which have been designed and constructed as the integral 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.

Main sponsors

firstclimate²

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