ANNEX R – PASSPORT TEMPLATE

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- A. Project title
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- D. Unique Project Identification
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Annex 1 ODA declarations





SECTION A. Project Title

Title: Alaşehir Geothermal Power Plant Project 24 MW Date: 27.04.2016 Version no.: 01 Date: 26.10.2016 Version no.: 02 Date: 30.11.2016

Version no.: 03

SECTION B. Project description

Start date of the project activity: October /2010 – The first working on the project site. Magneto

telluric Surveys 3D Modelling Report

According to the Generation License Completion Date of the Plant is 01/02/2017

TÜRKERLER Jeotermal ENERJİ ARAMA VE Üretim A.Ş. (TÜRKERLER Geo-Thermal Energy Exploration and Generation Joint Stock Co.) plans to install a Geo – Thermal Power Plant near the Sub-District of Piyadeler, District of Alaşehir, Province of Manisa to generate electricity and transmit it to the national grid under the generation license acquired from the EPDK (Energy Market Regulatory Authority. It will generate electricity of approximately 177840 GWh annually thanks to the project having a total installed output of 24 MW. The project would ensure carbon reduction of approximately 97,350 tons annually when compared to Turkey's present energy generation forecasts. Upon transmission of energy to be generated by Türkerler Alaşehir Geo-Thermal Power Plant to the national grid, a portion of the country's steadily increasing energy requirements would be met as the region would be positively affected by the increases in income, population movement, training, health and other social and technical amenities and utilities. It is considered that the Project would provide major outputs economically because renewable and clean energy resources, which generate minimal effects in terms of environmental effects, would be used by the Power Plant.

Due to the project is Geo-Thermal Power Plant Project which is renewable energy source, the project helps to keep environment clean and CO2 emission reduction calculations are showed in the following parts of the PDD. Expected total emission reduction for the chosen crediting period is calculated as 91597,72 tCO2. Crediting period is 7 years. Estimated amount of annual average GHG emission reductions 91597,72 t CO2/year.



SECTION C. Proof of project eligibility

C.1. Scale of the Project

Project Type	Large	Small
	х	

|--|

C.2. Host Country

Turkey

The host country Turkey does not have a cap on its GHG emissions.



C.3. Project Type

Please tick where applicable:

Project type	Yes	No
Does your project activity classify as a Renewable Energy project?	х	
Does your project activity classify as an End-use Energy Efficiency Improvement project?		
Does your project activity classify as waste handling and disposal project?		

Please justify the eligibility of your project activity:

Pre Announcement	Yes	No
Was your project previously announced?		Х
Explain your statement on pre announcement The project was not previously announced to be going ahead without the rev credits.	venues from ca	rbon





C.4. Greenhouse gas

Greenhouse Gas	
Carbon dioxide	Х
Methane	
Nitrous oxide	

C.5. Project Registration Type

Project Registration Type	
Regular	Х

Pre-feasibility assessment	Retroactive projects (T.2.5.1)	Preliminary evaluation (eg: Large Hydro or palm oil- related project) (T.2.5.2)	Rejected by UNFCCC (T2.5.3)



SECTION D. Unique project identification

D.1. GPS-coordinates of project location

The coordinates of project are given next tables;

Project Site	Coordinate order : To right , up		Coordinate order : latitude, longitude	
	Datum: ED-50		Datum: WGS-84	
	Type: UTM D.O.M.: 27 Zone: 35		Type: Geographic	
			D.O.M.: -	
			Zone: -	
	Scaling Factor.: 6 degree		Scaling Factor: -	
	624828	4251912	38.406093	28.429596
	624976	4251875	38.405739	28.431284
Türkerler Geo-Thermal Power Plant	624938	4251707	38.404231	28.430819
	624800	4251774	38.404854	28.429251
	624828	4251912	38.406093	28.429596

Table 1 Coordinates of the Power Plant Site¹

Table 2 Coordinates of the Wells²

Project Site	Coordinate order Datum: ED-50 Type: UTM D.O.M.: 27 Zone: 35 Scaling Factor.: 6	: To right , up degree	Coordinate order longitude Datum: WGS-84 Type: Geographic D.O.M.: - Zone: - Scaling Factor: -	: latitude,
Batı Piyadeler-1 (1 well)	625201	4251716	38.404275	28.433832
Doğu Piyadeler-1 (1 well)	625718	4251528	38.402509	28.439717
Bayramyeri-1 (1 well)	623841	6251588	38.403312	28.418239

 $^{^{1}}$ Retrieved from the Alaşehir GPP EIA.

² Retrieved from the Alaşehir GPP EIA.





Explain given coordinates

D.2. Map



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The project is located in near the Sub-District of Piyadeler, Alaşehir District, Piyadeler Town. The project area showed on the Topographic Map with 1/25.000 scale. In the near the Sub-District of Piyadeler, Alaşehir District, Piyadeler Town, 23.595 m² of the total area is used for power plant area which includes Power house. The Geo – Thermal Power Plant Project that is planned to install by the TÜRKERLER Geo-Thermal Energy Exploration and Generation Joint Stock Co. will be located on the 3290. Parcel in the 18. Screw plate, Province of Manisa, District of Alaşehir, Piyadeler Town. The Title Deed of the 18.035 m² of the planned power plant installation area belongs to the TÜRKERLER Geo-Thermal Energy Exploration and Generation Joint Stock Co. Rest areas will be included to the power plant area by purchase by consent or compulsory purchase.

SECTION E. Outcome stakeholder consultation process

E.1.	Assessment of stakeholder comments

Stakeholder comment	Was comment taken into account (Yes/ No)?	Explanation (Why? How?)
Would separate wells be bored to provide irrigation to the greenhouses? What would be the benefits of such wells?	Yes	Upon an increase in the number of these power plants for generation, the sum of funds paid by the government to imports would decrease, with surplus funds being spent on education, health and infrastructure. Therefore, our prosperity would increase. This energy is the most powerful one of renewable energy types such as wind, hydraulic and solar energy. The volume of boron getting out of the wells bored by villagers without proper awareness disturbs villagers. DSi tries to take measures against this situation. As long as





	without control in this	
	plain, the volume of boron	
	would increase in shallow	
	waters as soil would be	
	richer in terms of salt	
	contents and we would	
	have less and less	
	opportunities to use land	
	for agricultural purposes.	
	Based on an analysis of the	
	master plan made by DSI in	
	the region, agricultural	
	activities would increase	
	by preventing ignorant use	
	of ground water. This is	
	the benefit to be provided	
	by it nationwide. In order	
	to explain about Boron	
	Level an expert report has	
	been prepared by a	
	chemist whose name is	
	Nazım Yıldırım and a	
	geological engineer whose	
	name is Erinç Tonguç.	
	As regards the benefits to	
	be provided by it to local	
	communities, 18 wells	
	nave been bored from	
	2011 to the present times.	
	Because the well depths	
	would be nighter, such	
	volumes of water drawn by	
	village people from such	
	range of 150 m would not	
	ha affected thereby The	
	be affected thereby. The	
	systems of the wells which	
	are used at the	
	greenhouses are not	
	custom The wells which	
	system. The wells which	
	have been dug would not	
	pe usea in greennouse	
	operations. It would be	
	provided to the urban	
	neating system. After all,	





		geo-thermal water is not directly used at greenhouses. Water from the wells would be used to heat the system.
To what extent are the presently operating wells and generated waste waters and waste materials from you or other companies harmful on environment?	Yes	Water is such water having boron. Only boron is harmful on plants; other substances present therein have no harm. Therefore, if such water is to be used in irrigation, it must be used by diluting it with pure water.

E.2. Stakeholder Feedback Round

Please describe report how the feedback round was organized, what the outcomes were and how you followed up on the feedback.

In order to start the stakeholder feedback round informative mail was sent. The feedback is waiting. In addition to that notebooks were leaved to mukhtar and worksite to read complaints and requests.

E. 3. Discussion on continuous input / grievance mechanism

By the way of continuous input/grievance mechanism, it is aimed to maintain a transparent communication channel with the local stakeholders throughout the crediting period of the project, to obtain the unforeseen issues that arise during the course of a project, to monitor the suggestions of stakeholders about the project, to understand the local conditions with locals' direct experience, to maintain the participation of stakeholders in a more active and continuous way and to increase the mutual trust between the project owner and the local stakeholders.

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- 1. Continuous input/grievance expression process book
- 2. Telephone access
- 3. Internet/email access will be the methods to maintain the mechanism.

The comments received through those methods shall/will be documented using the template below which is the template of process book as well. The template book will be in Turkish.

The template of process book;

	Method Chosen (include all known details e.g. location of book, phone, number, identity of mediator)	Justification
Continuous Input / Grievance		
Expression Process Book		
Telephone access		
Internet/email access		
Nominated Independent Mediator (optional)		

At the LSC meeting, after mentioning about the subject of monitoring, the continuous input & grievance mechanism explained to the participants. The methods of input were explained to ensure that which method will be more appropriate. The process book and where is appropriate to make it available for local people and others were asked to participant. The mediator method was eliminated since locals stated that, "the mediator may be subjective after a while. You say during 7 or more years, people can change, we cannot be sure that he will be objective." The project consultant brought forward the method of process book after that criticism of local people. However, the place of book could not be decided for long time. Actually, it resulted in a clutter. It is foreseen actually since all local authorities may think as the position of process book somehow shows to the reputation and domination. The local people could not give their opinions even the project consultant encourage them to give comments. At the end of debates, it was decided that the process book will located at the Alaşehir Municipality. The other methods telephone access and internet/email access was explained at the meeting for clearance. After the identification of the exact location of the process book in the municipality building, it will be stated in the GS Passport and PDD as well.

The comments in the book will be check once in a month, the PP will record changes that are made to the project, acknowledge problems and explain their causes and it was stated at the LSC meeting.

The telephone number for communication will be that of the project site office and project consultant.

The Alaşehir town has an internet access. Local people from town are able to use the internet and can give their comments via email. The email addresses of the GS's regional manager, project manager and project consultant will be provided to for the stakeholders to contact.

The calls and emails received will be logged and recorded in the same way as in the book, with the date, comment, action requested and project response recorded for each message. The stakeholders are not required to give their personal details.

If the comments cannot be addressed by the project, or if they are irrelevant, if he desired outcome of the stakeholders cannot be achieved, these are all explained. The PP will give maximum effort to solve the problems raised and be respectful to the views of stakeholders and try to suggest alternative solutions whenever possible.

All issues identified during the crediting period through any of the Methods shall have a mitigation measure in place. The identified issue should/will be discussed in the revised Passport and the corresponding mitigation measure should be added to sustainability monitoring plan.

SECTION F. Outcome Sustainability assessment

F.1. 'Do no harm' Assessment

Safeguarding principles	eguarding principles Description of relevance Assess to my project project it (low,		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.	Turkey is a party of European Convention on Human Rights ³ since 1954. Therefore the national and internationally protected rights will be considered and shall be complied in. Furthermore, dignity, cultural property and uniqueness of indigenous people will not be affected by the project since no resettlement of indigenous people are in the project site.	Low	Not required	
2. The project does not involve and is not complicit in involuntary resettlement.	The 18,035 m2 area of planned plant belongs to Türkerler Geothermal Energy Exploration and Production Co. The rest of the area (5560 m2) is party land-private land. The private land will be purchased with mutual consent or expropriation. ⁴ If the	Medium	Expropriation process will be conducted with Turkish Expropriation Law. The process will be complied related laws and regulations.	

³ Please See Official Website of Ministry of Foreign Affairs of Turkey : <u>http://www.mfa.gov.tr/the-european-convention-on-human-rights.en.mfa</u> ⁴ Alaşehir GPP, Project Description File, page 25.



	private land is purchased with mutual, expropriation process will be conducted with Turkish Expropriation Law. The process will be complied related laws and regulations.		
3. The project does not involve and is not complicity in the alteration, damage or removal of any critical cultural heritage.	There is not any historical, Natural or Cultural Heritage area in the Project site that required to be protected according to the Agreement of Protection of Cultural and Natural Heritage of the World. ⁵	Low	Not required
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 to the project. Being a member of association and collective bargaining are a legal right of all employees in Turkey. All staff recruited is employed according to the national legislations. ⁶ In addition, the international agreements ILO articles 87 ⁷ - freedom of association- and 98 ⁸ - right to collective bargaining- will be considered and applied.	Low	Not required
5. The project does not involve and is not complicit in any form of forced or compulsory labour.	Any form of forced or compulsory labour is not relevant to the project. In addition to the relevant national legislations; Turkey is a party of ILO convention. Therefore regarding the forced labour the articles 29 ⁹ and 105 ¹⁰ of ILO convention will be	Low	Not required

 ⁵ Alaşehir GPP, Project Description File, page 27,28.
 ⁶ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/sozlesmeler.htm
 ⁷ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/soz087.htm

 ⁸ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/soz098.htm
 ⁹ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/soz029.htm
 ¹⁰ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/soz105.htm



	considered.		
6. The project does not employ and is not complicit in any form of child labour.	The project does not employ child labour. Turkey is a party of IPEC since 1992. Turkey has signed the convention of ILO (International Labour Organization) the articles 182 ¹¹ was ratified and 138 ¹² ratification process was initiated.	Low	Not required
7. The project does not involve and is not complicit in any form of discrimination based on gender, race, religion, sexual orientation or any other basis.	Turkey has signed the relevant articles of ILO which are 10013 and 11114 and committed to comply with the articles in question. Therefore during whole project process the project will not involve any form of discrimination.	Low	Not required
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. The construction of the project requires labour force for construction and machinery/equipment operation. During the construction phase, workers may be exposed to serious risks (accidents, explosion etc.) Turkey has ratified ILO convention 155 about work safety and precautions. ¹⁵ Furthermore, the host country has its own regulations. ¹⁶	Medium	The Project owner will take all measures make all provision in order to protect the health of workers and prevent occupational risks. The company will provide training and information to workers. The company has to make organisation and provide equipments to protect the workers. The employer will adapt the health and safety measures to changing conditions. ¹⁷
Environmental Protection			

¹¹ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/soz182.htm ¹² Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/soz138.htm

¹³ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/soz100.htm
¹⁴ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/soz110.htm

¹⁷ Alaşehir GPP, Project Description File, page 16

¹⁵ Retrieved from http://www.ilo.org/public/turkish/region/eurpro/ankara/about/sozlesmeler.htm

¹⁶ Regulation on Labour Health and Labour Safety http://www.mevzuat.adalet.gov.tr/html/5115.html



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 ¹⁸ : "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." The project has minimum impact on environment and takes precautionary approach regarding environmental challenges. According to the Project Description File of the project all Regulation which entered into force with Environmental Law Numbered 2872 will be followed. ¹⁹	Medium	The minor wastes (domestic solid wastes, machine oils, packaging material wastes, used up tries, excavation) will be handled with necessary measures according to the relevant national legislations ²⁰ . The Project area a flat land. Therefore, only excavation work for foundation will be conducted. Firstly, vegetable soil will be stripped and it will be laid for appropriate sections of land. Excavation materials will be deposited in the Project site during construction Works. Then after completion of construction Works, excavation materials will be used for landscaping activities. If the excavation material increases the disposal of material will be carried out with relevant municipality. ²¹ The excavation works shall comply with the "Regulation on the Control of Excavation Soil, Waste of Construction and Debris" ²²
involve and is not complicity in significant conversion or degradation of critical natural habitats, including those that are	area or critical habitats in the project region. Turkey has its own legislations regarding the protected areas and is a	Low	Not required

 ¹⁸ The Wingspread Conference on the Precautionary Principle (1998)
 ¹⁹ Alaşehir GPP, Project Description File, page 6,27
 ²⁰ Alaşehir GPP, Project Description File, page 8,9,10
 ²¹ Alaşehir GPP, Project Description File, page 10.
 ²² Published at the official gazette date: 18.03.2004 and number: 25406



 (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 	party of many international agreements regarding the protected areas like BERN ²³ .		
local communities.			
Anti-Corruption			
11. The project does not involve and is not complicit in corruption.	Turkey has ratified UN Convention against corruption ²⁴ and the OECD Convention on Combating Bribery of Foreign Public Officials in International Business Transactions. ²⁵ The project does not involve corruption.	Low	Not required

F.2. Sustainable Development matrix

Indicator	Mitigation measure	Relevance to achieving MDG	Chosen parameter and explanation	Preliminary score
Gold Standard indicators of sustainable development	If relevant, copy mitigation measure from 'Do No Harm' assessment, and include mitigation measure used to neutralise a score of '-'	Check <u>www.undp.or</u> g/mdg and <u>www.mdgmonit</u> or.org Describe how your indicator is related to local MDG goals	Defined by project developer	Negative impact: score '-' in case negative impact is not fully mitigated, score '0' in case impact is planned to be fully mitigated No change in impact: score '0' <u>Positive</u> impact: score '+'
Air quality	1)Dust emissions will be reduced with	MDG- 7: Ensure Environmental	Parameter: 1)Gas emission	0

 ²³ Alaşehir GPP, Project Description File, page 35,36
 ²⁴ Retrieved from http://www.unodc.org/unodc/en/treaties/CAC/signatories.html
 ²⁵ Retrieved from http://www.oecd.org/investment/briberyininternationalbusiness/anti-briberyconvention/40272933.pdf



he minimized ²⁷			sustainable development into country policies and programmes and reverse the loss of environmental resources 7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	 2)Level of dust emissions during construction of the product activity Explanation: The results of geothermal reservoir analysis, it was determined that the reservoir included the CO2, N2, O2, CH4, H2S mainly. The reservoir consists of 99,99 % CO2 by volume. Total emission amount is 38.252 kg/h. Amount of CO2 emission is 37,9 kg/h. ²⁶Amount of other gases are 0,352 kg/h. There will be dust emissions during construction of the plant. There might be gas release (0.352 kg/h) from the geothermal fluid. Therefore air quality nearby residential areas will be monitored. 4) Maintenance works of the construction machines will be conducted seasonable. Hence, the emissions will ba minimized ²⁷ 	
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 $^{^{26}}$ Alaşehir Project Description File, page 12

²⁷ Alaşehir Project Description File, page 12



			Monitoring: 1) Air quality nearby residential areas will be monitored in terms of other gases (CH4, H2S).	
Water quality and quantity	 The used water will be re-injected to reinjection wells completely. Hence, existing groundwater level will be conserved. The mitigation measure is not required for waste water from personnel. 	MDG- 7: Ensure Environmental Sustainability 7.C Halve, by 2015, the proportion of the population without sustainable access to safe drinking water and basic sanitation	Parameter 1: Amount of re- injected geothermal fluid. Parameter 2: Waste water from personnel Parameter 3: Bor level in water Baseline 1: No injection of geothermal fluid since no exit of geothermal fluid since no exit of geothermal fluid from the wells to be re-injected. Baseline 2: No waste water occurred from personnel in construction and operation phase Baseline 3: A specific Bor level related to hydrogeological structure of water Target 1: All geothermal fluid will be re- injected to feed the geothermal fluid will be re- injected to feed the geothermal field. Apart from that there is no waste water in operation phase	0





and operation
phase is collected
in cesspool. After
that, the waste
water is taken
from vacuum truck
of the Municipality
of Pivadeler.
Target 3:
Bor level in the
water will not
exchange because
of re-injection
Explanation 1:
By means of
reiniection, the
fluid will not be
released or left to
the soil The
reinjection process
nrevents
environmental
dron and heat
1055.
Explanation 2: In
construction
phase 200
workers were
assigned Total
assigned. Total
of workers was 20
m2/day Then 20
m2/day wasta
motor occured
water occureu.
In operation
employees are
employees die
dssigned. Total
water requirement
4,5 m3/day.
Ineretore, 4,5
m3/day Waste
water is being
occured. Ine
waste water
occured in both
construction phase
and operation

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²⁸ Alaşehir Project Description File, page 48

			phase is collected in cesspool. After that, the waste water is taken from vacuum truck of the Municipality of Piyadeler. Monitoring: Boron levels in water will be monitored.	
Soil condition	CO2 emission will be collected and can be used in production of dry ice and frosting of food. The related regulations will be complied. The gas emissions including H2S will be under the limits.	MDG- 7: Ensure Environmental Sustainability 7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss	Parameter:1. Level of acidicgas emission2. Bor level in soilBaseline:1. No emissionsince anyoperation ofgeothermal powerplant.2. A specific Borlevel related totopographicalstructure ofproject areaTarget:CO2 emission willbe collectedand can be used inproduction of dryice and frosting offood. 29 The relatedregulations will becomplied. The gasemissionsincluding H2S willbe under thelimits. Therefore,any negativeimpacts will notoccur on the soilespeciallyagricultural land.Monitoring:Boron levels in soilwill be monitored.	0

 $^{\rm 29}$ Alaşehir Project Description File, page 12



³⁰ The "Regulation On Assessment and Management of Environmental Noise" (Published in official gazette dated 07.03.2008 and numbered 26809) ³¹ Alaşehir Project Description File, page 15

³²The "Regulation on Control of the Waste oil (Published in official gazette dated 30.07.2008 and numbered 26952, amendment: date: 30.03.2010,number: 27537)

³³Regulation of Disposal of Hazardous Wastes (Published in official gazette dated 14.03.2005 and numbered 25755, amendment: date: 30.10.2010,number: 27744)

³⁴ Regulation of Disposal of Solid Wastes (Published in official gazette dated 14.03.1991 and numbered 20814)



			be monitored in order to determine disposed or not to Piyadeler Municipality waste disposal site.	
Biodiversity	During the excavation works which shall be carried out under the Project, vegetal soil shall be scraped off at the site. Such vegetal soil to be scraped off shall be used in landscaping works around the activity units.	MDG- 7: Ensure Environmental Sustainability 7. B Reduce biodiversity loss, achieving, by 2010, a significant reduction in the rate of loss.	Parameter: The number of affected species in the project site. Baseline: There are existing habitats and regional biodiversity in the region. Target: Minimize the impact of project activity to ecosystem and biodiversity during both construction and operation stages. There will be no significant negative impact on the environment that can be named as biodiversity loss as per GS Annex I. Monitoring: Vegetal soil will be monitored in order to storage regularly to use for landscaping.	0
Quality of employment	A mitigation measure is not required for this indicator.	MDG-1: Eradicate extreme poverty & hunger 1.B. Achieve full and productive Employment and decent work for all, including women and women and young people	Parameter 1: Number of employees that will be participate the trainings preferred by project manager Baseline: No trained personnel in selected preferred training (ie environmental awareness and	+



			process, operation condition of geothermal power plants Target: The increase in the environmental awareness of employees by training.	
Livelihood of the poor	A mitigation measure is not required for this indicator.	MDG-1: Eradicate extreme poverty & hunger 1.A.Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day	Parameter: changes in living standards, number of people living under the poverty line by means of employment to the GPP: the number of recruited local people. Baseline: No additional income for local people in absence of the project. Target: Project will create new job opportunities during construction & operation phases. Explanation: Income generation by local recruitment with project activity will have indirect impacts to changing living standards of the local people and number of people living under poverty line.	+
Access to affordable and clean energy services	A mitigation measure is not required for this indicator.	MDG- 7: Ensure Environmental Sustainability 7.2 CO2 emissions, total, per capita and per \$1 GDP (PPP)	Parameter: Clean energy provided for the use of people including the locals (the parameter can be defined as a measurable way, since Turkey do not have separated and specific	0





			regions that produce and use the electricity only in the region. Hence, the indicator will not be monitored.) Baseline: Energy demand increases in Turkey constantly. In the absence of the project activity there won't be any difference on energy production in contrary to the energy demand; or the fossil fuels will take the place of renewable sources. Target: A distributed Energy Systems is useful for increasing the efficiency. Besides, the project helps to decrease the dependency of imported fossil fuels (like natural Gas, coal etc.)	
Human and institutional capacity	A mitigation measure is not required for this indicator.	MDG-1: Eradicate extreme poverty & hunger 1.A.Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day	Parameter: increasing awareness of people on environment. Baseline: There is no significant development in the education and skills of the local people. Besides, most of the people don't aware of the environmental responsibilities. Target: Project will contribute	0





Quantitative employment and income generation	A mitigation measure is not required for this indicator.	MDG-1: Eradicate extreme poverty & hunger 1.A.Halve, between 1990 and 2015, the proportion of people whose income is less than \$1 a day	of the staff and awareness about environmental issues Parameter: annual wage rate to workers. Baseline: No job opportunities and payment. Target: Several employees will be employed during construction and operation phases. Therefore the project will contribute to decrease the local unemployment rate and help income generation. Monitoring: Paid wages to the workers will be monitored.	0
Access to investment	A mitigation measure is not required for this indicator.	MDG-8.D Develop a Global partnership for development 8.C 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: Amount of avoided fossil fuel (i.e. natural gas) imported. Baseline: Turkey's dependency on imported fossil fuels like natural gas, imported coal, is at high levels. Target: Calculated saved payments by shifting oil and natural gas. The project helps to decrease the dependency of imported fossil fuels (like Natural Gas, imported coal etc.)	+





Technology transfer and technological self-reliance	A mitigation measur is not required for this indicator.	MDG-8.F In cooperation with the private sector, make available the benefits of new technologies, especially information and communications.	 Parameter: Total number of employee having geothermal power plant related trainings. Baseline: No worker trained about GPP before that. Target: The workers within the project trained to be able to work for a GPP, the workers shall be trained. 	0
Justification choice A justification para	es, data source and pr graph and reference s	ovision of references	n indicator, regardless c	of score
Air quality Loading necessar the purp land pre vehicles volumes any adve emission the stage any vehi would be in their p		ig and unloading shall sary, it shall be ensured impose of preventing dust preparation works. ³⁵ T es to be operated in con- es and emissions origin lverse effects on the pre- ons that would arise fro age of construction, rou chicles and equipment a be taken under mainter r place until completion	be carried out without by spraying that soil it t emission which would the emission to be generation Works woul ating from equipment sent air quality. In order the vehicles which we tine controls shall be of nd such vehicles require nance and other vehicles of their maintenance. ³⁶	ut hurling and if s kept humid for d generate during enerated by the d be of very low would not have r to minimize the would operate at commissioned on ring maintenance es would be used
Water quality and quantity Such volu stages of collected full, wast emptier t Re-injecti thought a process is issue. In conducte injection during bo		volumes of waste water of of construction and of red at a cesspit to be built astes would be taken of er to be obtained from Pit ection process was deen thabout discharge metho is is the best alternative if In the planned project, cted with re-injection. The on is put into use. The fit both construction phase	which would potentiall operation under the p ilt impermeably and wh ut and disposed by m iyadeler Municipality or cided by project own ods of geothermal fluid in terms of environmen , the energy productio The facility will not o reshwater aquifers will and operation phase.	y generate at the project would be hen the cesspit is eans of a cesspit n payment. ³⁷ her after further l. The re-injection tal and economic n process will be perate if the re- not be damaged ³⁸ The reinjection

³⁵ Alaşehir GPP, Project Description File, page 20

 ³⁶ Alaşehir GPP, Project Description File, page 12
 ³⁷ Alaşehir GPP, Project Description File, page 7
 ³⁸ Alaşehir GPP, Project Description File, page 8



	process will increase the life of the reservoir and prevent the environmental problems. Therefore the pressure drop and heat loss will be prevented. The reinjection process will be conducted in a closed loop and the control systems will be installed against leakage. Hence, there will not be any negative impact into the ground water and underground water. ³⁹
Soil condition	The Project Area is flatland and only foundation excavation would be carried out in the area where the power plant building would be located. Prior to commencement of Works, vegetal soil would be scraped off on the Project Area and subsequently spread on the suitable parts of land as per applicable technique thereof. It would be stored in an area inside the Project Area in such a manner and to such an extent ensuring that its height would not exceed 2 meters and that there would be oxygen circulation into soil. On rainy days, no operations would be carried out in connection with top soil and soil which is scraped off would not be stored inside any water deposits. Materials which would generate in excavation Works would be collected inside the Project Area throughout excavation and used in landscaping Works following completion of construction works. ⁴⁰
Other pollutants	Noise: There would be noise emission originating from such machinery and equipment to be used in the land preparation and construction Works of the project. The Residential Areas nearest to the Project Area is Piyadeler Municipality which is located approximately 100 m east of the Project Area. Therefore, noise which would generate at the stage of construction in the Project Area would not be expected to have any adverse effects on the existing structures. In addition, because land preparation Works would be carried out outdoors under the project, it would be very difficult to take measures against noise. Noise would vary during a day throughout the Works but because Works would be carried out during day time (07.00-19.00), generation of noise emission would thus be limited.41 In addition, necessary measures shall be taken to protect workers from risks, especially those related to hearing, which would occur in terms of health and safety due to their exposure to noise. It shall be ensured by providing those working on the machines and equipment at the stage of construction with suitable protective aids and gadgets such as heatgears, earpieces or ear plugs. Thus, the levels of noise that would originate due to such machinery and equipment used in Works would have been reduced to such a level which would not disturb workers and local residents. In addition, the values which are stipulated by the Regulations would also be met and thus, noise to be caused to the surroundings would be kept at a minimum.42 Solid Waste: The domestic wastes from personnel and non-recyclable waste will be collected separately in closed containers that installed around the plant. The collected waste will be sent to the disposal sites of Piyadeler Municipality periodically. 43 Waste Oil: Maintenance of any mechanical equipment to be used during production will be made the closest authorized technical service. However, if there is a necessity about making maintenance in the site, waste management shall be achieved in such a manner and to

 ³⁹ Alaşehir GPP, Project Description File, page 18
 ⁴⁰ Alaşehir GPP, Project Description File, page 19
 ⁴¹ Alaşehir GPP, Project Description File, page 20
 ⁴² Alaşehir GPP, Project Description File, page 21
 ⁴³ Alaşehir GPP, Project Description File, page 18-19

	such an extent ensuring that such waste generation could be minimized pursuant to the Regulation on the Control of Hazardous Wastes as regards Waste Oils and Regulation on the Control of Waste Oils, which took force after it was issued in the Official Gazette Issue No 26952 of 30.07.2008 as regards Waste Oils again and such types of wastes shall be temporarily stored in impermeable tanks and sent to the licensed disposal facilities according to the analysis results in connection therewith. 44 In the operation phase, the isolation oil will be used. The isolation sample will be taken periodically by maintenance crew in order to determine air and gas ratio. The The oil includes more air and gas will be used again after vacuuming. The life of isolation oil is between 25-30 years. The isolation oil completed the lifetime will be handled according to Waste Oil Control Regulation45
Biodiversity	Flora&Fauna: There are no such plant species in the activity area and its surroundings, which are endemic, rare and endangered among such taxon having a higher possibility to exist there due to the habitat characteristics, which must be placed under control as per Annex 1 List of the "Convention on the Protection of Wildlife and Habitats in Europe" (BERN CONVENTION) and which are included in the "Convention on the International Trade of Endangered Species of Wild Animals and Plants (CITES)" .46 The terrestrial fauna species are not such species which would particularly suffer harm and they are not under any threat and considered part of such species causing least concern. In addition, necessary warnings shall be issued by the activity owner to such staff members who would be involved in the Project so that no damages would be inflicted on the fauna species 47
Quality of employment	Unqualified staff members would be recruited locally to the largest extent possible at the stage of construction under the project and permanent staff members would again be locally recruited at the operation stage and thus, contribution would be made to the local economy though to a low extent. Such staff members who would work at the stage of construction of the project would have accommodation at the job site to be built inside the Project Area.48
Livelihood of the poor	It is projected to employ approximately 200 persons at the land preparation and construction stages of the Project and approximately 30 persons at the operation stage. ⁴⁹ In the scope of the Turkish laws, trainings about waste management are conducted in the facilities by the consultants. Therefore, the local people employed in the power plant will be trained about waste management trainings.
Access to affordable and clean energy services	As a local energy source, geothermal power helps to mitigate Turkey's high import dependency and thus improves the access to energy services, especially in the scenarios of import stops or energy price hikes. The International Energy Agency criticizes dependency on oil and gas imports and demands for expansion of renewable energy in Turkey. However, as the improved access to energy services does not

- ⁴⁴ Alaşehir GPP, Project Description File, page 9
 ⁴⁵ Alaşehir GPP, Project Description File, page 9-10
 ⁴⁶ Alaşehir GPP, Project Description File, page 32
 ⁴⁷ Alaşehir GPP, Project Description File, page 38
 ⁴⁸ Alaşehir GPP, Project Description File, page 6
 ⁴⁹ Alaşehir GPP, Project Description File, page 6



	affect the local public (as the electricity is delivered to the grid) and cannot be assigned to specific consumers. ⁵⁰
Human and institutional capacity	Project development will promote the use of renewable energies in the region. It will require widespread education and skills improvement, as the local people will be incorporated in the development and maintenance of the project. The local public is intensively involved in the development and decision-making regarding the plant within the stakeholder consultation process, representing a new kind of institution as part of the development of a Turkish energy project. One measurable effect on human capacity is the improved skills of plant staff. Education and trainings are part of the monitoring. One measurable effect on human capacity is the improved skills of plant staff. Education and trainings are part of the monitoring as described in (cf. section G of the projects Gold Standard Passport)
Quantitative employment and income generation	It is projected to employ approximately 200 persons at the land preparation and construction stages of the Project and approximately 30 persons at the operation stage. ⁵¹ When the power plant would start operation, contributions would be made to the local economy and employment opportunities would be locally created upon recruitment of labor from the nearest Residential Areas at the stages of construction and operation. ⁵² Unqualified staff members would be recruited locally to the largest extent possible at the stage of construction under the project and permanent staff members would again be locally recruited at the operation stage and thus, contribution would be made to the local economy though to a low extent. Upon transmission of energy to be generated by Türkerler Alaşehir Geo-Thermal Power Plant to the national grid, a portion of the country's steadily increasing energy requirements would be met as the region would be positively affected by the increases in income, population movement, training, health and other social and technical amenities and utilities. It is considered that the Project would provide major outputs economically because renewable and clean energy resources, which generate minimal effects in terms of environmental effects, would be used by the Power Plant.
Access to investment	The project and its role in strengthening the sustainable sector of electricity generation in Turkey tend to contribute to mitigation of import dependency.70 With 70 percent of total primary energy supply in the last years and a growing trend this is an important issue for Turkish energy policy. Electricity generation from renewable sources is completely independent from any imports and thus does not have any negative effects on the balance of payments. The positive effect of this project to this indicator will be monitored by calculation of avoided natural gas and liquid fuel import amount for electricity production. The share of electricity generation from natural gas and liquid petroleum fuels, total natural gas and liquid petroleum fuels amounts used for electricity production and electricity production amount of natural gas and liquid petroleum fuels will be taken from official statistics.(TUIK) ⁵³

 ⁵⁰ IEA: Energy Policies, Turkey 2005 review, 2005, pages 85, 100 and 129
 ⁵¹ Alaşehir GPP, Project Description File, page 6
 ⁵² Alaşehir GPP, Project Description File, page 49
 ⁵³ Retrieved from TUIK, www.tuik.gov.tr



Technology transfer and technological self-reliance

Project will assist in transfer of new technology to Turkey . Technological skills of local suppliers and technicians are also expected to increase as a result of trainings provided by the equipment manufacturers.

SECTION G. Sustainability Monitoring Plan

Data / Parameter	M _{steam,y}
Unit	t steam/yr
Description	Quantity of steam produced in year y
Source of data	Project Developer – main inlet steam flow and the periodically meter-calculations
Value(s) applied	85 t/yr as calculations
Measurement methods and procedures	The steam quantity discharged from the geothermal wells should be measured with a flow meter (or other equipment with at least the same accuracy). But the measurements of the flowmeters are not reliable values. The steam rate and CO2 rate is certain. Therefore they calculate the amount of the steam that leaves the system. Pressure and temperature upstream of the venture meter is measured using the same flow meter to define the steam properties. The measurement results will be summarised transparently in regular production reports.
Monitoring frequency	Daily continuous measurement-calculations
QA/QC procedures	Meters will be calibrated according to the manufacturer standard. Period of calibration: every year
Purpose of data	Project emission calculation
Additional comment	

Data / Parameter	W _{steam,CO2,y}
Unit	tCO2/t steam
Description	Average mass fraction of carbon dioxide in the produced steam in year y
Source of data	The NCG data is taken from sampling as prescribed in the methodology
Value(s) applied	30 % of steam
Measurement methods and procedures	Non-condensable gases sampling should be carried out every year in the steam field- power plant interface using ASTM Standard Practice E1675 for Sampling 2-Phase Geothermal Fluid for Purposes of Chemical Analysis (as applicable to sampling single phase steam only) by a third independent party or internal laboratory. The CO2 sampling and analysis procedure consists of collecting non-condensable gases samples from the main steam line with glass flasks.
Monitoring frequency	Every year
QA/QC procedures	PGE Laboratory QA / QC Procedure
Purpose of data	Project emission calculation
Additional comment	

Data / Parameter	wsteam,CH4,y
Unit	tCH4/t steam



Description	Average mass fraction of methane in the produced steam in year y
Source of data	Project activity site
Monitoring frequency	As per the procedures outlined for wsteam,CO2,y
QA/QC procedures	-
Purpose of data	-
Additional comment	Applicable to dry, flash steam and binary geothermal power projects. The planned project does not cause trace amount of CH4 emission.

Data / Parameter	EG _{facility,y}
Unit	MWh/yr
Description	Quantity of net electricity generation supplied by the project plant/unit to the grid in year
	У
Source of data	Project Developer – revenue meter (electricity sales)
Value(s) applied	Annual production : 177,840 MWh/yr
Measurement methods and procedures	Electricity produced will be measured by a watthour meter (connected to a digital control system and recorded continuously), which can measure both power delivered to the grid and received from the grid. Net electricity generation will be calculated according to internal consumption and loss. In the case of main revenue meter failure, a cross-check meter will be used as a back-up meter to measure both power delivered to the grid and received from the grid.
Monitoring frequency	Continuous basis with monthly reports
QA/QC procedures	The QA/QC will be conducted through cross checking with electricity sales receipts. Meters will be calibrated according to the Standard Operation Procedures (SOPs).
Purpose of data	Baseline emission calculation
Additional comment	Standard Operation Procedures (SOPs) or other documents.

Data / Parameter	Mworking fluid,y
Unit	t workingfluid/yr
Description	Quantity of working fluid leaked/reinjected in year y
Source of data	Project Site
Measurement methods	Measured via log books and maintenance reports of the plant
and procedures	
Monitoring frequency	Annually
QA/QC procedures	Measured from the amount of working flow reinjected to the binary system of the
	geothermal plant. Cross check with the purchase invoices.
Additional comment	Standard Operation Procedures (SOPs) or other documents.



Additional remarks monitoring

SECTION H. Additionality and conservativeness

This section is only applicable if the section on additionality and/or your choice of baseline does not follow Gold Standard guidance

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 declaration

The Gold Standard

ANNEX D - OFFICIAL DEVELOPMENT ASSISTANCE DECLARATION

Date: 09.07.2014

The Gold Standard Foundation

79 Avenue Louis Casai

Geneva Cointrin, CH-1216

Switzerland

RE: Declaration of Non-Use of Official Development Assistance (ODA) by Project Owner of GS 3380 – ALAŞEHİR GEOTERMAL POWER PLANT 24 MW

TURKERLER JEOTERMAL ARAMA VE ÜRETİM A.Ş.

As Project Owner of the above-referenced Project, and acting on behalf of all Project Participants, I now make the following representations:

EN-ÇEV ENERJİ ÇEVRE YATIRIMLARI VE DANIŞMANLIĞI HARİTACILIK İMAR İNŞAAT A.Ş.

I hereby declare that I am duly and fully authorized by the Project Owner of the above-referenced project to act on behalf of all Project Participants and make the following representations:

I. The Gold Standard Documentation

I am familiar with the provisions of The Gold Standard Documentation relevant to ODA. I understand that the above-referenced Project is not eligible for Gold Standard registration if the Project receives or benefits from ODA with the condition that some, or all, of the carbon credits [CERs, ERUs, or VERs] coming out of the Project are transferred to the ODA donor country. I hereby 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 of implied, that any or all of the carbon credits issued as a result of the Project's operation will be transferred directly or indirectly to the country of origin of the ODA.

In the event the Project is a Programmes of Activities where the CME is also implementing one or more Component Project Activities (CPAs) or Voluntary Project Activities (VPAs), I further acknowledge and understand that this Declaration is applicable to all of the CPAs/VPAs where the CME and the CPA/VPA implementing entity is the same.

II. 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 covered by this Declaration, or that an entity providing ODA to the host country may at some point in the future benefit directly or indirectly from the carbon credits generated from the Project as a condition of

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investment, I will notify The Gold Standard immediately using the Amended ODA Declaration Form provided below.

III. Investigation

The Gold Standard reserves the right to conduct an investigation into any project it reasonably believes may be receiving ODA with the condition that some or all of the carbon credits from the Project will be transferred to the ODA donor country.

IV. Sanctions

I am fully aware that the sanctions identified in The Gold Standard Terms and Conditions may be applied to me or the above-referenced Project in the event that any of the information provided above is false or I fail to notify The Gold Standard of any changes to ODA in a timely manner.

I swear that all of the statements contained herein are true to the best of my knowledge.

Signed:	Haen
Name:	/ Hulusi KARA
Title:	General Manager
On behalf of:	
Place:	
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AMENDED OFFICIAL DEVELOPMENT ASSISTANCE DECLARATION

Date: 09.07.2014

The Gold Standard Foundation

79 Avenue Louis Casai

Geneva Cointrin, CH-1216

Switzerland

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RE: Amended Official Development Assistance Declaration For [insert project GS ID number]

I, [insert full name], on behalf of [insert name of Company], and in reference to [insert project GS ID number], submitted the Official Development Assistance Declaration to The Gold Standard on [insert date]. It has come to my attention that there has been a material change in the role of ODA for the development or implementation of GS-3380

[Please explain the changes here]

[For POAs where the CME is also a CPA/VPA implementing entity, please list all of the CPAs/VPAs that are receiving ODA, and the CPAs/VPAs covered by the original Declaration that are not receiving ODA.)

I understand that The Gold Standard will contact me to discuss the consequences of these changes for this project.

I swear that all of the statements contained herein are true to the best of my knowledge.		
Signed:	Hlan	
Name:	Hulusi KARA	
Title:	General Manager	
On behalf of		
Place:		
197.33	Influence. Innovate. Inspire.	