HEZ ENERJİ İNŞAAT SAN. VE TİC. A.Ş

Moralı Geothermal Power Plant Project

EXTENDED EXECUTIVE SUMMARY

NOVEMBER 2023

ANKARA

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Version	Revision	Date	Prepared by					Quality Management By	Checked by	Approved by
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Revision Codes: A: Draft, B: Final Draft, C: Final

Project No: 23 / 004

NOVEMBER 2023

CLIENT:

HEZ enerji

Moralı Mah. Tariş Küme Evleri Mevkii Ortaklar No:118 Germencik / Aydın / Türkiye

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This document presents the Environmental and Social Impact Assessment (ESIA) Report for the 'Moralı Geothermal Power Plant Project' undertaken by HEZ Enerji İnşaat San. ve Tic. A.Ş. The report has been prepared by 2U1K Engineering and Consultancy Inc. to evaluate the environmental and social impacts of the projects.

The Project involves the construction of a 24 MWe Geothermal Power Plant, and Drilling activities (including the Electricity Transmission Line (ETL) and geothermal pipeline) w the geothermal resource operation license with the 2009-138 license number area in Aydın province, Söke district, Argavlı Neighbourhood, and Germencik district Morali, Uzunkum Neighbourhoods. The project area is provided in Figure 1.

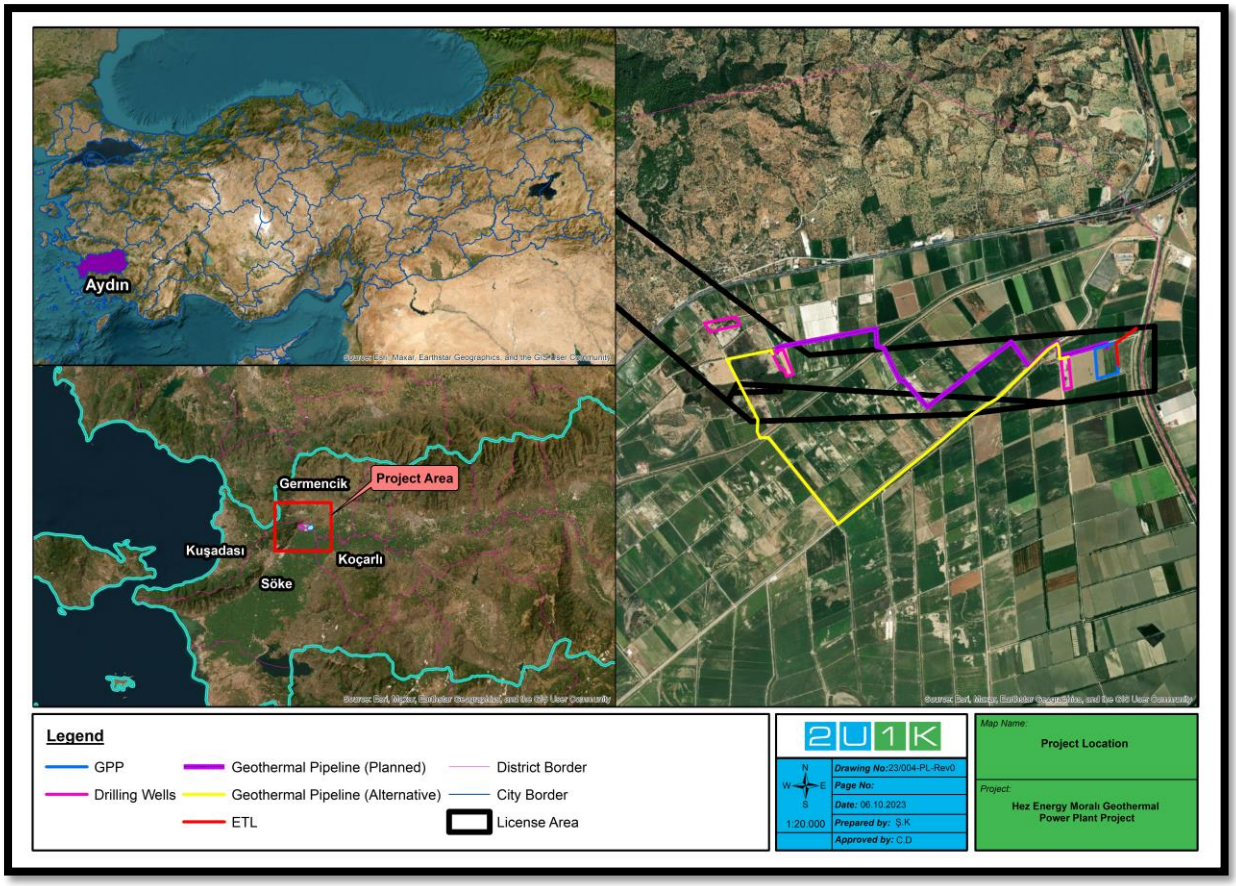

Figure 1. Project Location

A total of 54,577 m^2 of land acquisition has been completed for the geothermal power plant, switchyard and drilling locations. The lands were acquired through willing buyer willing seller arrangements and obtaining consent from individuals. There are no formal or informal users in the aforementioned areas.

The Project Company has determined the planned route of the geothermal pipeline within the scope of the Environmental Impact Assessment (EIA) license in the designated area. The route of the geothermal pipeline is approximately 3.30 kilometers long and runs between Argavlı Neighbourhood in Söke District and Uzunkum Neighborhood in Germencik District. The route of the geothermal pipeline is planned to pass along the roads surrounding agricultural lands, so land acquisition is not anticipated. In addition to the initially planned route for geothermal pipeline, an alternative route has been planned to run parallel to the irrigation canal. The use of the alternative route will require the approval of the General Directorate of State Hydraulic Works.

However, during the construction, if there is a boundary violation or a need for additional land arises, agricultural lands may be affected, and land acquisition or expropriation may be necessary.

Associated with the Project, the Electricity Transmission Line (ETL) will be established following the approval of TEIAS (Türkiye Electricity Transmission Corporation A.Ş). The power plant will be connected to the Kubilay GPP-Maren GPP Energy Transmission Line. The Project Company has designed a route for Electricity Transmission Lines (ETL) and submitted it for approval by TEİAŞ. Careful consideration has been given to avoid traversing through privately owned properties, with the exception of a single point where the electricity cable will cross a private property (affecting 2 parcel owners), spanning a distance of 120 meters. The Project Company will provide easement payments for the right of passage, and apart from the necessity of planting tall trees for safety purposes, the landowners' use of the affected land will not be unduly restricted. With the final decision of TEİAŞ, consultations will be held with landowners in case of any design changes.

Land acquisition needs will be clearly determined prior to construction. If land acquisition/lease/expropriation is required during the construction and operation of the geothermal pipeline and electricity transmission line, a Resettlement Action Plan for the project will be prepared to ensure that land acquisition and/or expropriation is carried out in accordance with World Bank requirements and national legislation. The plan will aim to minimize land acquisition and provide fair valuation and compensation, especially for agricultural lands. It will be ensured that no construction works can start before all land acquisition is completed, and Project Affected Persons (PAPs) are compensated in line with Bank policies as will be defined in RAP. The Project Company will consult with landowners along the route and take into account the concerns and requests of the stakeholders. Additionally, the Company will create suitable crossings (omega) to not obstruct access to field entrances.

The activities under this Project are included in Annex-I according to the Turkish EIA legislation, and therefore an EIA Report is prepared for the Project and EIA positive decision was taken in 2022.

As per WB O.P. 4.01, projects are classified in categories A, B or C depending on the severity of their potential impacts on the environment. The Project is specified as Category B+ project which resulting environmental and/or social impacts that are specific to the location of the facility and/or with impacts that could be easily identified and prevented.

ESIA, or Environmental and Social Impact Assessment, is a crucial process undertaken to evaluate the potential environmental and social consequences of proposed projects or developments. Its primary aim is to identify, predict, and assess the positive and negative impacts that a project might have on the surrounding environment and local communities. By conducting ESIA, developers and decision-makers can make informed choices, incorporating measures to mitigate adverse effects and enhance positive outcomes. The assessment typically involves comprehensive studies, stakeholder consultations, and the formulation of action plans to ensure sustainable development and minimize harm to ecosystems and society.

Significant potential impacts/risks identified in the ESIA and residual impacts after implementation of mitigation measures are presented below. Project related environmental and social mitigation measures and monitoring activities are provided in the ESMP.

Table 1. ESIA Impact Assessment Summary

Impact Description	Phase	Impact Nature	Overall Impact	Residual Impact
Noise Generation	Construction	Negative	High	Low
Soil Pollution caused by Construction Activities	Operation	Negative	Medium	Negligible
Impact on Surface and Groundwater	Construction	Negative	Medium	Low
Impact on Surface and Groundwater	Operation	Negative	Medium	Low
Drilling Fluids,Test Water,Domestic Wastewater,Reject Water from Reinjection Well, Cleaning Water	Construction	Negative	Medium	Low
Drilling Mud and Sulfur,Sılica etc.	Construction	Negative	Medium	Low
Domestic Waste	Operation	Negative	Medium	Low
Heavy metal accumulation or loss of vitality on flora elements and poisoning, reproductive disorders or death on fauna	Construction	Negative	Medium	Low
Heavy metal accumulation or loss of vitality on flora elements and poisoning, reproductive disorders or death on fauna	Operation	Negative	Medium	Low

Impact Description	Phase	Impact Nature	Overall Impact	Residual Impact
Impacts related to direct and indirect employment opportunities	Construction	Positive	Medium	Low
Impacts on direct or indirect local employment	Operation	Positive	High	-
Impacts on agricultural activities within the Project Site boundaries	Operation	Negative	High	Medium
Impacts related to lack of information	Operation	Negative	High	Medium
Impacts on life and fire safety	Construction	Negative	High	Low
Impacts related to health and safety	Construction	Negative	Medium	Low
Impacts on life and fire safety	Operation	Negative	High	Low
Impacts related to health and safety	Operation	Negative	High	Low
Impacts related to Land Acquisition	Construction	Negative	Medium	Low
OHS Risk / Work Accident (H2S gas release, electrical equipment failure etc.)	Construction	Negative	High	Medium
OHS Risk / Work Accident (H2S gas release, electrical equipment failure etc.)	Operation	Negative	High	Medium
Impacts on life and fire safety	Construction	Negative	High	Low
Impacts on community health	Operation	Negative	High	Low
Impacts on life and fire safety	Operation	Negative	High	Low

In essence, ESIA acts as a vital tool for sustainable project planning, promoting transparency and accountability while ensuring that development initiatives align with environmental regulations and social considerations. This process plays a fundamental role in safeguarding natural resources, preserving biodiversity, and protecting the well-being of communities impacted by development projects. By adhering to the ESIA framework, organizations can strike a balance between economic growth and ecological conservation, leading to more responsible and environmentally conscious decision-making. There are 12 wells within the scope of Moralı GPP Project. Drilling of 6 geothermal wells, was completed. Drilling works of 2 wells are on-going and there are 4 wells which are planned.ESIA study was prepared for the planned drilling of 4 wells, namely HEZ-6, HEZ-7, HEZ-8, ARG-2, GPP, the geothermal pipelines and the ETL within the scope of Moralı GPP Project specifically.