

ELECTRIC CORPORATION OF ECUADOR



Matala Photovoltaic Project



Futuro Energético

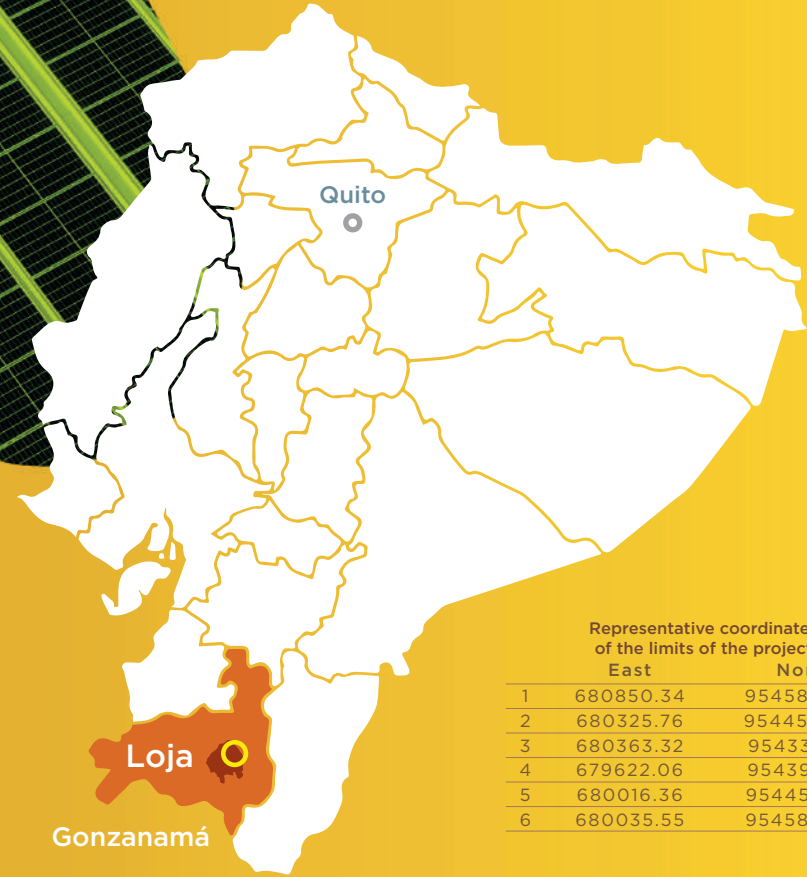


LOCATION

Ecuador
Galápagos



The site of the “Matala” photovoltaic project is located in the Nambacola parish, in the Matala sector, near the border between Catamayo and Gonzanamá. It is located at a distance of approximately 9 km from Nambacola, the closest town to the project, and approximately 15 km from the city of Catamayo.

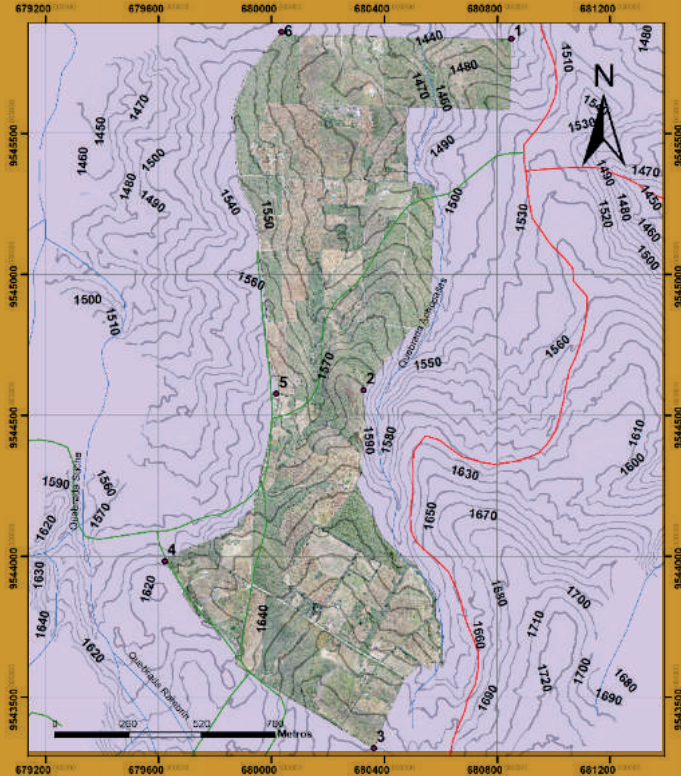


Representative coordinates
of the limits of the project

	East	North
1	680850.34	9545835.30
2	680325.76	9544589.40
3	680363.32	9543319.87
4	679622.06	9543982.10
5	680016.36	9544576.28
6	680035.55	9545859.65

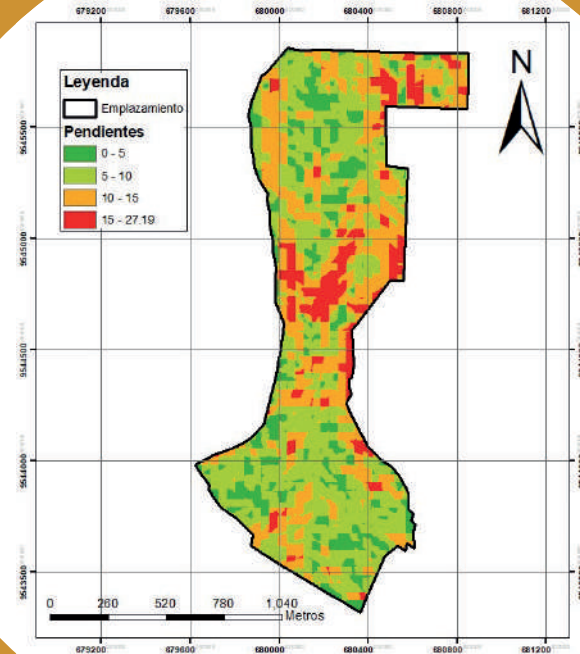
Gonzanamá





Topographic map of the "Matala" site.

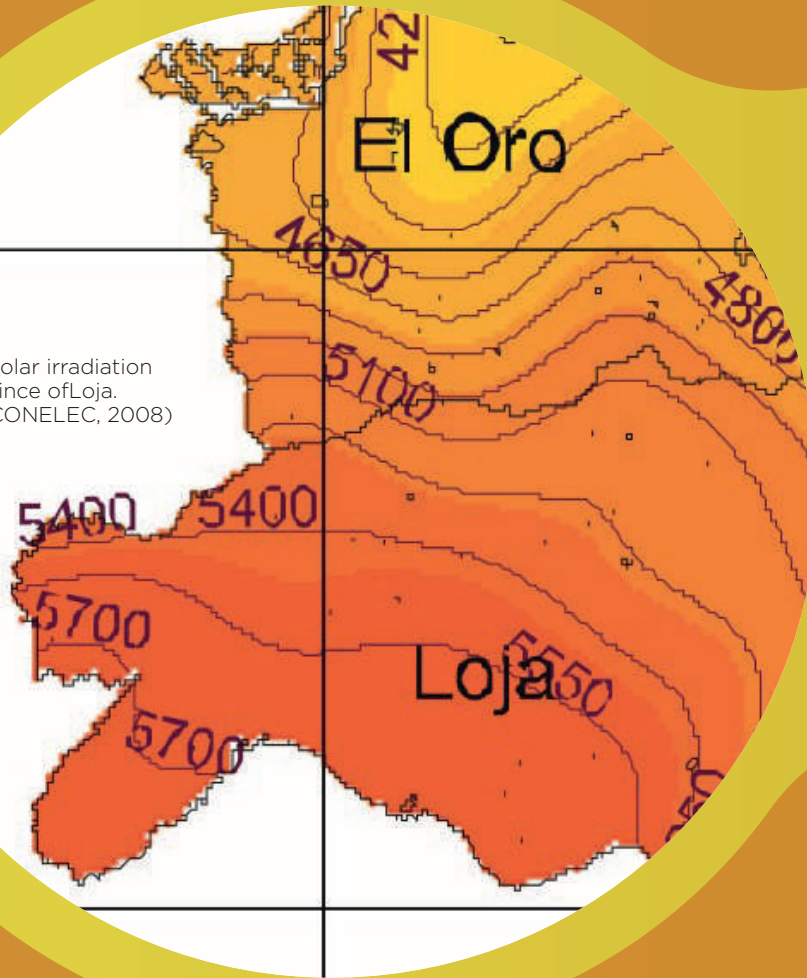
The polygon of the site has an extension of 159 Ha, with a NS orientation and a height that goes from 1312 to 1777 m.a.s.l. The project is located in cultivated areas, which are found throughout the entire zone. Topographically, the area has a maximum of unevenness of 465 m, presenting mostly slopes that are between 5° and 10° inclination; and in some sectors, there are slopes with a greater that 15° inclination, for which the land adaptation must be done, for the installation of the photovoltaic plant. For its safe, efficient and low environmental impact.



Slope map of the photovoltaic site "Matala"









Global solar irradiation
Province of Loja.
Source: (CONELEC, 2008)



The graphic shows the level of global solar irradiation of the province of Loja as indicated by the Solar Atlas of Ecuador for electricity generation purposes by CONELEC in 2008, obtained from the Solar Atlas of Ecuador (CONELEC 2008), which has average values of 5,400 Wh/m²/day, which is above the national average in other regions of the country. Currently, CELEC EP has a solar resource measurement station that operates from May 2021 to date.



	Level of study	Project profile		
	Existing studies	Production, energy and interconnection analysis made by CELEC EP		
	Power (MW)	100	Energy (GWh/year)	171.4
	Estimated plant factor (%) and performance	20%	Date of approval of design/studies	No studies
	Estimated construction time	18 months		
	Estimated construction budget	93 (MM USD)		





INTERCONNECTION

Interconnection alternatives for Matala project



An S/E is proposed in the project with a step-up transformer from 34.5 to 230 kV. There are 2 230 kV connection alternatives which are the following:

Matala
Photovoltaic
Project

Alternative 1: ■
S/E Matala - S/E La Avanzada connection to 230 kV:

Connection of S/E Matala with the future S/E La Avanzada through a single circuit L/T, which will also be used by the Membrillo Ducal project. The line groups the energy of both power plants, with which will have a Membrillo Ducal - Matala - S/E La Avanzada line.

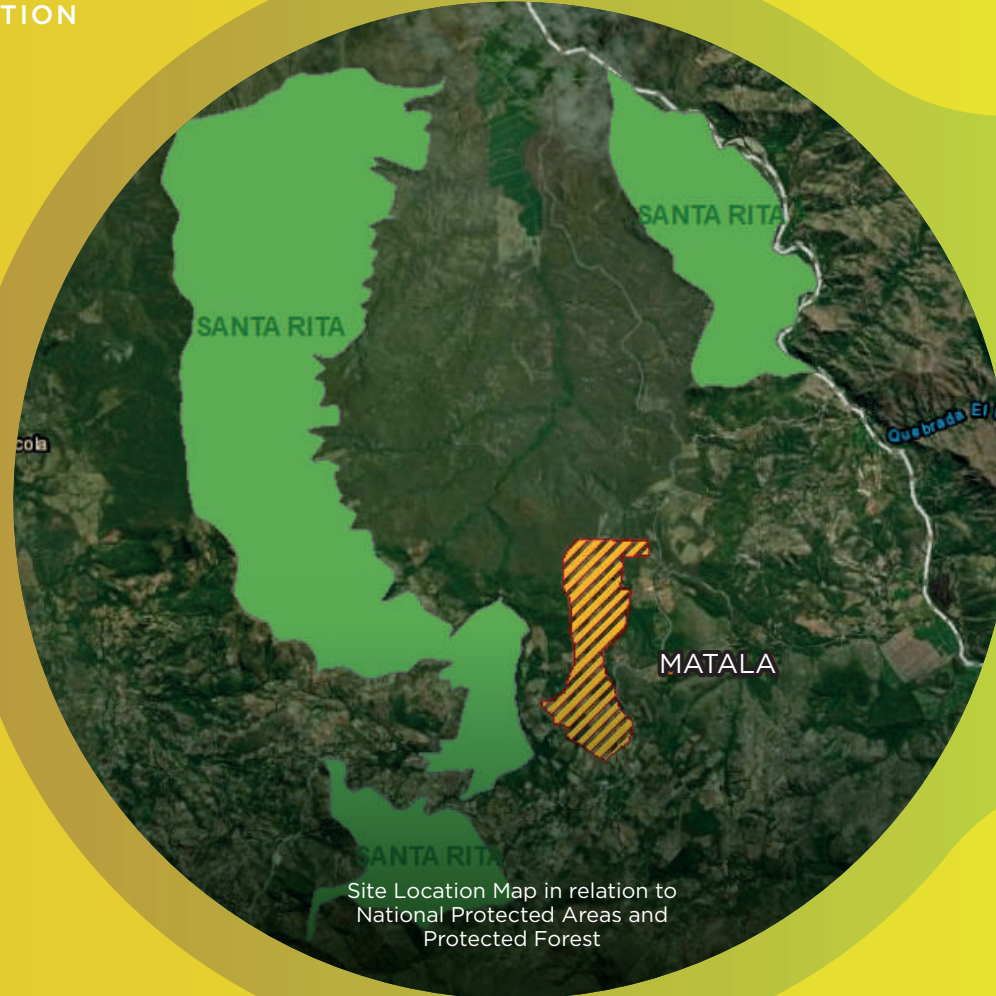
Alternative 2: ■
S/E Matala - S/E Cumbaratza connection to 230 kV:

Connection to the S/E Matala with the S/E of the Membrillo Ducal power plant through a 230 kV single circuit L/T and from there with another 230 kV single circuit line connected to the Cumbaratza substation.





The Matala site is not located within any Conservation Area of either the National System of Protected Areas (SNAP) of Ecuador, or Municipal Conservation Areas (ACMUS). However, due to the size of the project it's necessary to complete the environmental impact studies of the final design of the photovoltaic plant in order to obtain environmental licensing with the competent authority.



Site Location Map in relation to
National Protected Areas and
Protected Forest

ESTATES

On the other hand, the polygon of the location intersects a total of 54 private properties, whose referential information is available from preliminary studies obtained from SIGTIERRAS of the Ministry of Agriculture, Livestock, Aquaculture and Fisheries.





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