

Annex I to the Allocation-Impact Report, September 2024

Project description: Machala Photovoltaic Park “San Antonio”

Project Machala “San Antonio” falls in the eligible green project category of renewable energy production and storage units, and is therefore aiming to support the achievement of the UN Sustainable Development Goal UN-SDG 7 of affordable and clean energy.

TOP	Description
Project title	Machala Photovoltaic Park “San Antonio”
Country / region	Ecuador / Machala
Project type	Photovoltaic energy generation
Project net proceeds	80 mio.USD
Timeline	Q4/2024 – Q4/2025
System capacity / generation	100 MWp / 148 GWh/a
Plot size	115 ha
UN-Sustainable Development Goal	No. 7: affordable and clean energy
Eligible Green Project Category	No.7.2: substantially increase the share of renewable energy in the global energy mix
Reason why eligible	Photovoltaic park, renewable energy source
Expected impact	CO2-reduction of approx. -144.000 tCO2/a



Project phasing and budget-allocation

TIME-SCHEDULE

Project Name	Phase	2024		2025			
		Q3	Q4	Q1	Q2	Q3	Q4
Photo-voltaic Park	Budget / Concept						
	Design / Authorities						
	Procurement						
	Early Works / Infrastr.						
	Manufact. / Installation						
	Handover / Approval						

FINANCE-SCHEDULE

Project Name	Phase	2024		2025			
		Q3	Q4	Q1	Q2	Q3	Q4
Photo-voltaic Park	Budget / Concept		6,0	1,0			
	Design / Authorities		2,0	1,0			
	Procurement		13,0	10,0			
	Early Works / Infrastr.		2,0	4,0			
	Manufact. / Installation			9,0	9,0	9,0	6,0
	Handover / Approval					5,0	3,0
TOTAL: 80 Mio.USD			23,0	25,0	9,0	14,0	9,0

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UN-SDG’s (Sustainable Development Goals)

In addition to the UN-SDG No. 7 (affordable and clean energy) the project will comply also with the following UN-SDG’s:

UN-SDG Category	Sub-category
 No.9: Industry, innovation and infrastructure	No. 9.4: By 2030, upgrade infrastructure and retrofit industries to make them sustainable
	No. 9a: Facilitate sustainable and resilient infrastructure development in developing countries
 No.11: Sustainable cities and communities	No. 11c: Support least developed countries, including through financial and technical assistance
 No.12: Responsible consumption and production	No. 12a: Support developing countries to strengthen their scientific and technological capacity to move towards more sustainable patterns of consumption and production
 No.13: Climate action	No. 13.2: Integrate climate change measures into national policies, strategies and planning

Executive summary of LCA (Life-Cycle Assessment)

1. Method

The LCA has been conducted according to ISO 14040/44 (Environmental Management) to analyze the CO₂-footprint and the environmental impact of the project. In addition the CO₂-reduction was calculated in comparison to current practice to determine the benefit of the project.

2. Life-Cycle Assessment and Life-Cycle Impact Assessment

The necessary data has been collected and calculated according to their origin:

- raw material and manufacturing
- transportation
- site preparation and construction
- operation and
- recycling

The total impact of the PV-project was then compared to the current energy-mix of Ecuador and its related tCO₂/a –output. The difference as an indicator of the project impact is shown in the next chapter.

3. Conclusion

Machala Photovoltaic Park “San Antonio” will **reduce –144.000 tCO₂/a** in comparison to the existing energy generation throughout the country. It will also increase the percentage of renewable energy within the national energy-mix.

In addition it will further benefit the above mentioned UN-SDG’s by improving the infrastructure, developing further sustainable strategies and support the region with financial and technical assistance.