

PV

Case study #1

Trama Tecno Ambiental



Trama TecnoAmbiental (TTA) is a Barcelona-based, international photovoltaic company championing the production of clean energy. TTA implement innovative technology that puts the user at the centre. Specialising in the electrification of rural areas, they bring green energy production to places where it is needed.

Supported by project leaders Fraunhofer, TTA welcomed the opportunity to take part in the LCA to go project, to reduce their carbon footprint and apply life cycle thinking.

LCA to go was used to inform the decision making of a PV project in Chad, financed by UNIDO and the Chadian Ministry of Petroleum & Energy, to bring electricity to five rural communities.

The challenge was to minimise the project's carbon footprint whilst sticking to a very tight budget and use technology that could be repaired or retrofitted by local people.

TTA were able to compare the lifecycle of different module technologies through environmental and performance assessments by inputting simple data into LCA to go. Polycrystalline silicon modules were selected for their overall minimal impact on the environment, performing well in lifetime electricity production and their lower embedded carbon footprint.

PV system	Lifetime electricity production (kWh)	Energy Pay Back (years)	Carbon Footprint (kg CO ₂ eq)	Relative emissions (kg CO ₂ eq / kWh)	PL (M€)
Micro-Grid_poly-crystalline Silicon	204.900	4,34	30.234,30	0,1476	712.131,10
Micro-Grid_amorphous Silicon	170.750	4,41	30.591,70	0,1792	723.286,20
Micro-Grid_monocrystalline Silicon	204.900	4,37	30.361,60	0,1482	717.039,70
Micro-Grid_CIS/CIGS thinfilm	170.750	4,36	29.705,20	0,1740	714.786,00

Maria Anzizu, project engineer and consultant at TTA said: “Although simple to use, LCA to go has supported us in making the right engineering decisions and improved our application of life cycle thinking. TTA are now able to communicate the environmental impacts of our systems to clients, like the UN, who are increasingly prioritising carbon footprint.”

Applying LCA to go to the project in Chad enabled TTA to not only reduce their systems embedded carbon but by maximizing the systems energy production, reduce the energy payback time.

LCA to go calculated TTA’s PV system to have a carbon footprint of 148 grams per 1 kW hour of electricity generated. LCA to go benchmarked this performance against other local sources of energy, such as lignite, whose carbon footprint measured a staggering 818 grams. This on hand, quantified review proved invaluable for supporting TTA’s relationship with UNIDO and the Chadian Ministry.