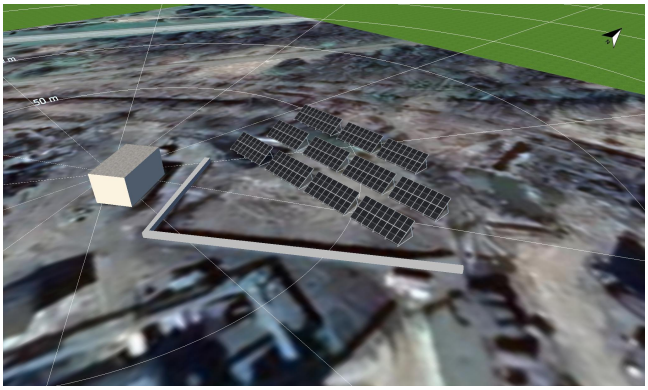
Project Name: LIMBAŽU SILTUMS SIA

05.04.2024

Your PV system

Address of Installation

Mazā noliktavu iela 13, Limbaži



Project Overview

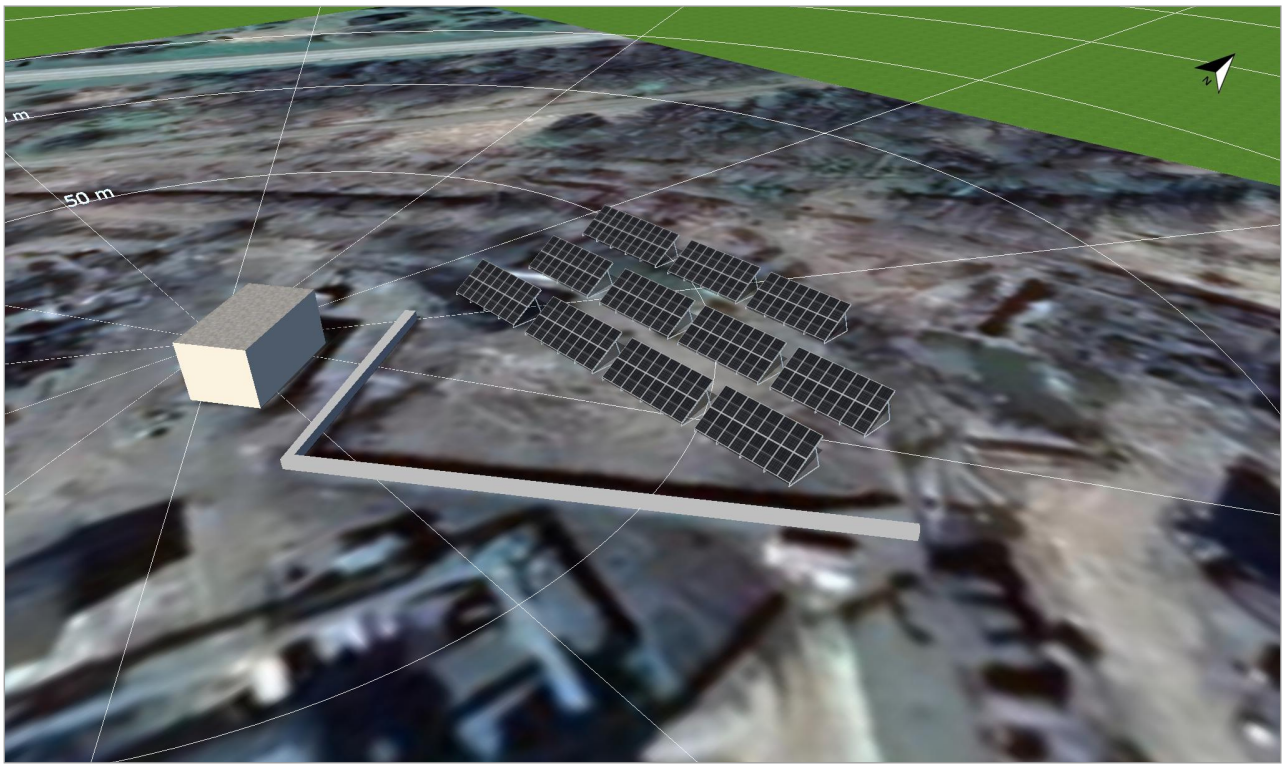


Figure: Overview Image, 3D Design

PV System

3D, Grid-connected PV System

Climate Data	Ainazi, LVA (2001 - 2020)	
Values source	Meteonorm 8.2	
PV Generator Output	118,8	kWp
PV Generator Surface	559,1	m²
Number of PV Modules	180	
Number of Inverters	1	

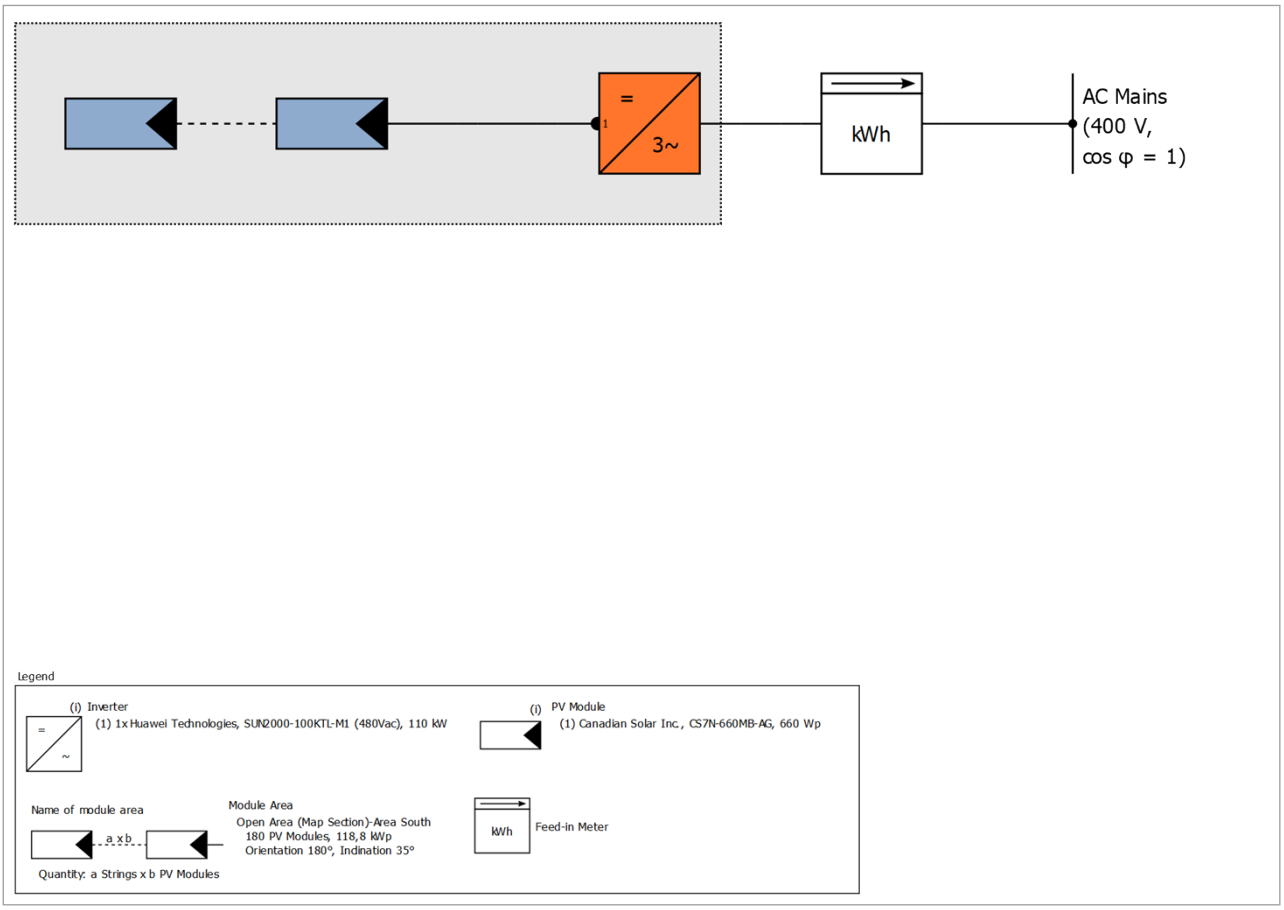


Figure: Schematic diagram

Production Forecast

Production Forecast

PV Generator Output	118,80	kWp
Spec. Annual Yield	1 082,80	kWh/kWp
Performance Ratio (PR)	91,03	%
Yield Reduction due to Shading	4,6	%
Grid Export	128 668	kWh/Year
Grid Export in the first year (incl. module degradation)	128 668	kWh/Year
Standby Consumption (Inverter)	31	kWh/Year
CO_2 Emissions avoided	38 848	kg / year

The results have been calculated with a mathematical model calculation from Valentin Software GmbH (PV*SOL algorithms). The actual yields from the solar power system may differ as a result of weather variations, the efficiency of the modules and inverter, and other factors.

Simulation Results

Results Total System

PV System		
PV Generator Output	118,80	kWp
Spec. Annual Yield	1 082,80	kWh/kWp
Performance Ratio (PR)	91,03	%
Yield Reduction due to Shading	4,6	%
Grid Export	128 668	kWh/Year
Grid Export in the first year (incl. module degradation)	128 668	kWh/Year
Standby Consumption (Inverter)	31	kWh/Year
CO_2 Emissions avoided	38 848	kg / year

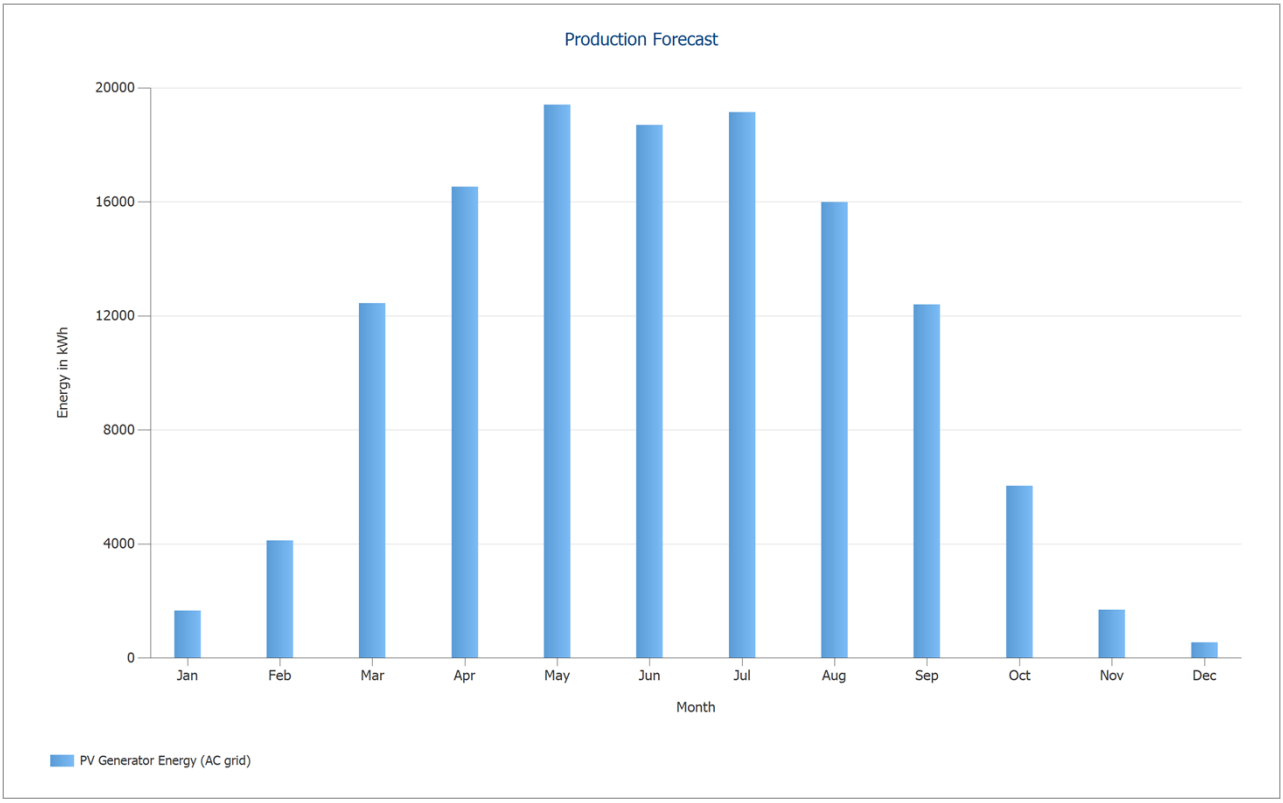


Figure: Production Forecast

PV System Energy Balance

PV System Energy Balance

Global radiation - horizontal	**1 011,28**	**kWh/m²**	
Deviation from standard spectrum	-10,11	kWh/m²	-1,00 %
Ground Reflection (Albedo)	18,11	kWh/m²	1,81 %
Orientation and inclination of the module surface	169,69	kWh/m²	16,65 %
Module-independent shading	0,00	kWh/m²	0,00 %
Reflection on the Module Surface	-11,21	kWh/m²	-0,94 %
Global Radiation at the Module	**1 177,76**	**kWh/m²**	
	1 177,76	kWh/m²	
	x 559,143	m²	
	= 658 534,36	kWh	
Global PV Radiation	**658 534,36**	**kWh**	
Soiling	0,00	kWh	0,00 %
STC Conversion (Rated Efficiency of Module 21,26 %)	-518 555,06	kWh	-78,74 %
Rated PV Energy	**139 979,30**	**kWh**	
Module-specific Partial Shading	-4 127,62	kWh	-2,95 %
Low-light performance	-304,34	kWh	-0,22 %
Deviation from the nominal module temperature	393,03	kWh	0,29 %
Diodes	-69,97	kWh	-0,05 %
Mismatch (Manufacturer Information)	-2 717,41	kWh	-2,00 %
Mismatch (Configuration/Shading)	-1 890,78	kWh	-1,42 %
PV Energy (DC) without inverter clipping	**131 262,20**	**kWh**	
Failing to reach the DC start output	-3,49	kWh	0,00 %
Clipping on account of the MPP Voltage Range	-5,54	kWh	0,00 %
Clipping on account of the max. DC Current	0,00	kWh	0,00 %
Clipping on account of the max. DC Power	0,00	kWh	0,00 %
Clipping on account of the max. AC Power/cos phi	-64,17	kWh	-0,05 %
MPP Matching	-239,58	kWh	-0,18 %
PV energy (DC)	**130 949,42**	**kWh**	
Energy at the Inverter Input	**130 949,42**	**kWh**	
Input voltage deviates from rated voltage	-102,05	kWh	-0,08 %
DC/AC Conversion	-2 179,50	kWh	-1,67 %
Standby Consumption (Inverter)	-31,14	kWh	-0,02 %
Total Cable Losses	0,00	kWh	0,00 %
PV energy (AC) minus standby use	**128 636,74**	**kWh**	
PV Generator Energy (AC grid)	**128 667,88**	**kWh**	

Plans and parts list

Overview plan

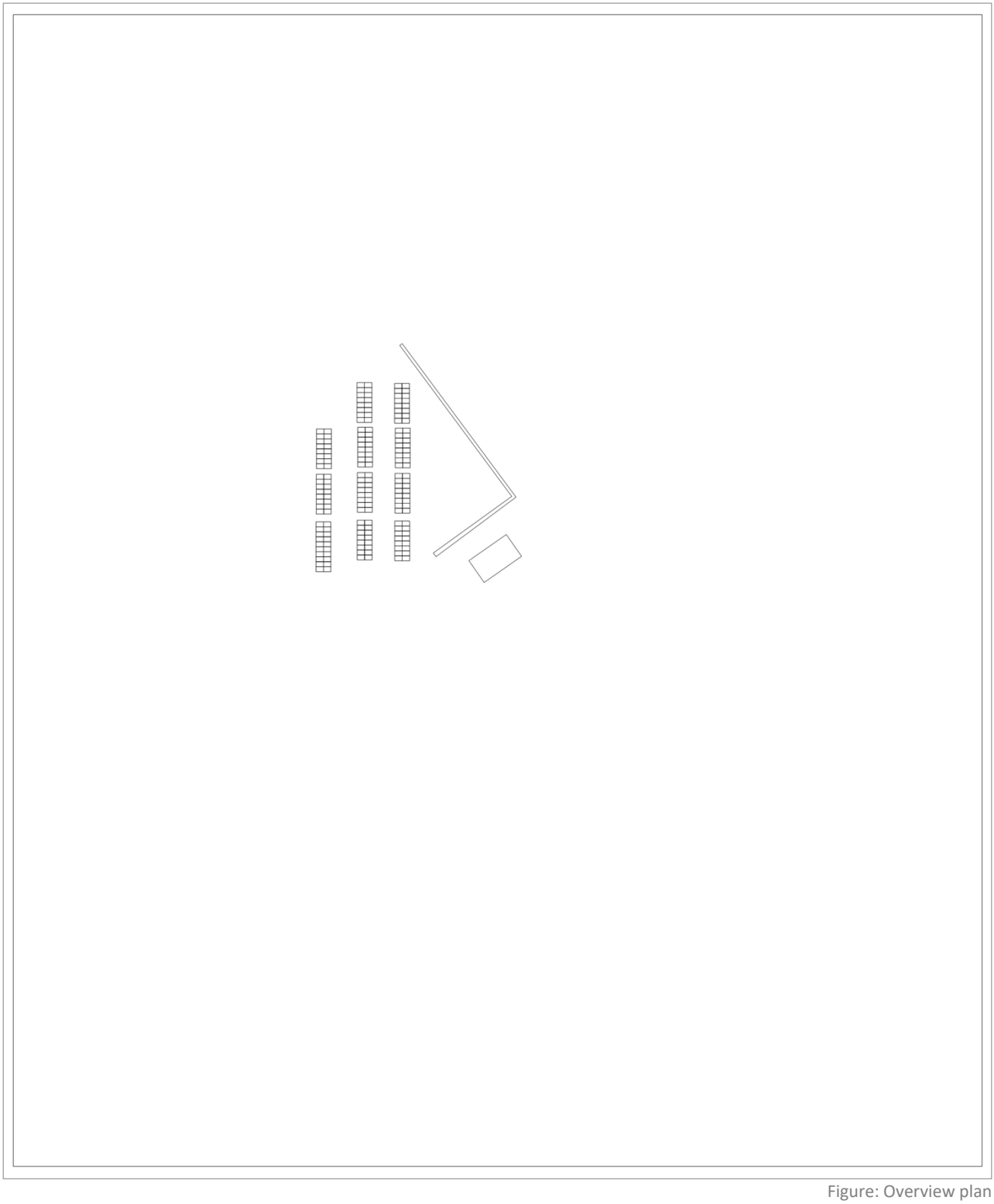


Figure: Overview plan

Parts list

Parts list

#	Type	Item number	Manufacturer	Name	Quantity	Unit
1	PV Module		Canadian Solar Inc.	CS7N-660MB-AG	180	Piece
2	Inverter		Huawei Technologies	SUN2000-100KTL-M1 (480Vac)	1	Piece
3	Components			Feed-in Meter	1	Piece