STS SOLAR

Project Datesheet

Ground mounted solar power plant

Features of the plant:

The basic components of the solar power plant are mono-crystalline modules SPV 180M-24 type, with nominal power of 180 Wp and voltage of 24 V. The power plant consists of 468 modules, forming 12 plates of 39 modules with inclination of 30°. Determining the number of modules in one string is performed by Sunny Design software, provided by the inverter manufacturer.

The generated electricity is fed to 12 inverters and to each inverter are connected 3 strings, consisting of 13 serially-connected modules.

Both end modules of each string with DC cable RADOX Solarcable single core 1x4mm^2 type are connected to the inverter input.

For this project were selected SMA Technologies inverters, Sunny Mini Central SMA SMC 7 000 TL model. The inverters are single-phase, without transformers and with much higher efficiency compared to the inverters with transformers. They have IP65 level of protection against external weather conditions.

The inverters are grouped into four groups by three and from each exits a CBT c 2x10mm^2 cable and goes to a properly sized circuit breaker into the relevant intermediate switchboard. From each intermediate switchboard exits a CBT-c 4x10mm^2 cable or CBT-c 4x16mm^2 cable and goes to a tripolar C60N 63A circuit breaker, with C-curve, into the main switchboard. In the switchboard is installed Power Logic PM9 electrometer, fitted with current transformers TT 150/5A and Phase log controller.

To achieve the necessary parameters of the earthing system are used 18 earthing devices, combined in a common circuit. The earthing circuit consists of a galvanized 40/4 mm steel bar, dug in the ground. The grounding of inverters, main switchboards and all metal non-current-carrying parts is carried out by welding or bolting to the grounding circuit.

For the implementation of the lightning protection system was chosen early streamer emission lightning conductor SCHIRTEC – AESE, with shaft height of 5.40 m.

The central monitoring and control device is „Sunny Web Box", with integrated radiation sensor (pyrometer) and interface for connection of various sensors for measuring of environmental parameters. They are installed in the modules with the same orientation and inclination.

Power Plant Specification

Size:	84.24 DC
Commissioned:	May 2012
Type:	Ground-mounted
Site Area:	5900 м^2
Output:	84 kW
CO_2 Displacement:	~ 72.9 metric tons per year
Module Surface Area:	597.5 m^2
Modules Used:	Type: SPV180M-24
	Quantity: 468
Angles:	Mounting Tilt: 30°
	Azimuth: 0°

Supported by:

shski PV

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